M. P. P. Co.

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No. 1

CATALOGUE and PRICE LIST

OF

Mackey Print Paper Co.

IMPORTERS AND MANUFACTURERS

OF

Engineers', Mathematical and Architects' Instruments, Materials and Supplies.

TRADE MARK

1/416

PITTSBURGH, PA.

U. S. A.

14517-c.2 1

General Office and Factory,
25th St. and A. V. R'y.
TELEPHONE—PITTSBURGH 1641-3.

Blue and Black Printing Dept.,
904 Lewis Building.
TELEPHONE—PITTSBURGH 1641-2.

WESTERN BRANCH:
153-155 La Salle Street,
CHICAGO, ILL.
TELEPHONE—EXPRESS 529.

PRICE, 50 CENTS.

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ENTERED ACCORDING TO ACT OF CONGRESS IN THE YEAR EIGHTEEN HUNDRED AND NINETY SEVEN BY MACKEY PRINT PAPER COMPANY IN THE OFFICE OF THE LIBRARIAN OF CONGRESS AT WASHINGTON.

MACKEY PRINT PAPER COMP'Y.
PITTSBURGH CHICAGO

INTRODUCTION.

WE take pleasure in placing before our many patrons, this Catalogue of our entire line of Engineers, Architects and Draughtsmen's Instruments and Supplies, which we hope will receive the same kind reception that has been accorded our much smaller editions in the past. We can confidently recommend every article listed, having exercised the greatest care to select only the best goods from the best makers, and we trust in consequence that the book will be given a careful perusal by everyone interested in Drawing Materials since numerous new specialties are included, in addition to our full line of standard goods. We call attention to the superior line of Drawing and Tracing Papers listed, and also to the descriptions thereof. They have been especially selected and are all of the highest standard of excellence.

Of our **French Blue Print Papers,** which have been on the market so long and which are so well and favorably known, there is but little more to be said than to state that although we have greatly increased our line of goods, we still give this branch of our business our very close attention, the department being in charge of an experienced chemist, and every roll of blue print paper is carefully tested before being shipped; thus the very best results are insured at all times.

We call particular attention to the magnificent line of Drawing Instruments listed and illustrated by us. The "**Lenox**" GENUINE SUPERIOR SWISS INSTRUMENTS are manufactured expressly for us by the best manufacturer in Switzerland, and we give each instrument or set of instruments which leaves our house, the highest endorsement possible to give a drawing instrument. They simply have no equal in material, shape or workmanship.

The "**German Round System**" and "**Finest German**" Drawing Instruments are of the best grades made in Germany and are of exceptionally good quality, being inferior only to the high grade "**Lenox**" GENUINE SUPERIOR SWISS INSTRUMENTS.

Our line of **Surveying Instruments** are only of the very best makes, and will bear in every particular the recommendation we give them.

A close inspection of our line of Steel Tapes, Calculating and Folding Rules, Scales, T Squares, Triangles, Drawing Pencils, Liquid and Stick Inks will show them to be unexcelled.

For the convenience of our large number of customers in the West and South-West, we established in the Spring of 1895, our

Western Branch in Chicago (**153-155 La Salle St.**)

and judging from its prosperity, it is appreciated by our many Western friends. Orders entrusted to us there will always receive our careful and prompt attention.

We trust that our friends will continue to favor us with that patronage so liberally bestowed upon us in the past, and we give the assurance of our continued efforts to merit the same.

Respectfully,
MACKEY PRINT PAPER CO.

NOTICE.

IN ORDERING any of the materials listed in this Catalogue, it will only be necessary to state the number of each article, unless the number represents more than one size or grade of that article. **Specify whether goods should be shipped by Mail, Express or Freight.**

Parties unknown to the firm must send CASH WITH ORDER, or good commercial reference.

Goods to be sent C. O. D. require a sufficient sum of money to cover freight charges both ways in case of non-acceptance. We can mail small articles **not exceeding four pounds** at the rate of one cent per ounce, the amount of which will be charged on invoice, but we can in no way be responsible for goods lost or damaged during transmission. **Registering Mail matter lessens the risk of loss.**

Remittances should be made by Post Office or Express Money Order, or Bank Draft, payable to the firm. Postage Stamps will be received in payment of any bill under one dollar.

All goods are packed with the utmost care, and no allowance will be made for damage during transit.

Boxes, if required for packing will be charged at cost.

It is our aim at all times to satisfy our patrons in every respect, and we therefore request that they advise us promptly should any of our goods prove unsatisfactory.

BLUE PRINT PAPERS.

As will be seen by reference to the list, we offer the largest and most complete assortment of Blue Print Papers of any house in America, having at all times given particular attention to this department of our business.

The papers employed by us are the product of the "**PAPETERIES de VIDALON**" (ANCIENNE MANUFACTURE, CANSON AND MONTGOLFIER) whose mills are the oldest and most extensive in France, making only papers of the highest excellence. They will be found uniform in weight, are exceptionally strong, tough, and of superior finish. Being chemically pure the papers, when sensitized, will keep from spoiling almost indefinitely, and owing to our superior sensitizing solution, they are the most **rapid printing papers** made, with the exception of those specially sensitized by us for rapid printing.

We guarantee our product in every way and being Sole American Agents for the "**PAPETERIES de VIDALON**," the same qualities and makes positively cannot be procured elsewhere.

Particular attention is directed to the fact that we handle only the first qualities of all papers, and in addition, we are the only house in the country employing the services of an experienced chemist as the superintendent of our Coating Department.

Our product, therefore, may be relied upon at all times, and if, in any case the same is found defective for any reason whatever, it will be replaced at our own expense.

Our papers are only sensitized as ordered and strictly fresh material is therefore assured. All orders are shipped on day of receipt.

RAPID PRINTING PAPERS.

During the winter months, we furnish an excellent "**RAPID PRINTING PAPER**" when desired and distinctly specified. This paper will print in ONE-FOURTH the time required by ordinary papers, thus saving much valuable time in dark gloomy weather.

While this Rapid Printing Paper will retain its sensitiveness longer than any other "so called" rapid printing paper, it is always advisable to carry a limited supply. By ordering the paper oftener, absolute freshness and excellent results are assured at all times.

SAMPLE BOOK WILL BE SENT ON APPLICATION.

SENSITIZED BLUE PRINT PAPERS.

	Width, Ins. 24	Ins. 27	Ins. 30	Ins. 36	Ins. 42
10. **EXTRA THIN PARCHMENT.**					
Per Roll, 10 Yards	$1.20	1.25	1.45	1.75	2.10
" " 25 "	2.50	3.00	3.30	3.75	4.40
" " 50 "	3.60	3.95	4.50	5.20	6.30
20. **THIN PARCHMENT.**					
Per Roll, 10 Yards	1.45	1.65	1.75	1.90	2.40
" " 25 "	3.25	3.50	3.75	4.10	4.70
" " 50 "	4.25	4.60	5.10	6.00	7.50
30. **MEDIUM PARCHMENT.**					
Per Roll, 10 Yards	1.70	1.85	1.95	2.15	2.65
" " 25 "	3.75	4.00	4.30	4.65	5.50
" " 50 "	5.50	5.75	6.25	7.50	9.50
40. **HEAVY PARCHMENT.**					
Per Roll, 10 Yards	1.80	2.00	2.15	2.35	2.80
" " 25 "	4.20	4.50	4.75	5.35	6.00
" " 50 "	6.50	6.85	7.40	8.75	10.50
50. **MEDIUM ORDINARY.**					
Per Roll, 10 Yards	1.20	1.25	1.45	1.65	2.00
" " 25 "	2.75	3.00	3.40	4.00	4.70
" " 50 "	4.40	4.60	5.10	6.00	7.50
60. **HEAVY ORDINARY.**					
Per Roll, 10 Yards	1.45	1.55	1.80	2.20	2.45
" " 25 "	3.25	3.50	3.95	4.25	5.30
" " 50 "	5.50	6.00	6.50	7.50	8.50
70. **EXTRA HEAVY ORDINARY.**					
Per Roll, 10 Yards	1.75	1.85	2.10	2.55	3.10
" " 25 "	3.80	4.00	4.75	5.25	6.75
" " 50 "	6.50	7.00	8.00	9.50	11.50

SENSITIZED MOUNTED BLUE PRINT PAPER.

This material is our regular **No. 60 Heavy Ordinary**, mounted on a fine quality of cloth. An absolutely **water proof** cement being used in mounting, the cloth and paper will not separate in the water bath, and prints dry out perfectly smooth and free from wrinkles. Its **great strength** recommends it to any desiring prints for **permanent record** or which are to be subjected to **constant handling, rough usage, etc.**

	Width, Ins. 27	Ins. 30	Ins. 36	Ins. 42
80. **MOUNTED BLUE PRINT PAPER.**				
Per Roll, 10 Yards	$7.75	8.50	9.75	11.25

SHEETS OF ANY SIZE CUT TO ORDER.

SAMPLE BOOK WILL BE SENT ON APPLICATION.

SENSITIZED BLUE PRINT CLOTH.

	Ins. Width, 30	Ins. 36	Ins. 42
90. **BLUE PRINT CLOTH.** Per Roll, 10 Yards	$3.75	4.25	5.25

UNPREPARED BLUE PRINT PAPERS.

	Ins. Width, 24	Ins. 27	Ins. 30	Ins. 36	Ins. 42	Ins. 54
10. **EXTRA THIN PARCHMENT.** Per Roll, 50 Yards	$2.00	2.25	2.50	3.00	3.75	4.50
20. **THIN PARCHMENT.** Per Roll, 50 Yards	2.10	2.50	3.00	3.75	4.50	5.50
30. **MEDIUM PARCHMENT.** Per Roll, 50 Yards	3.00	3.50	3.75	4.50	5.00	6.00
40. **HEAVY PARCHMENT.** Per Roll, 50 Yards	3.50	4.00	4.50	5.25	6.50	8.00
50. **MEDIUM ORDINARY.** Per Roll, 50 Yards	2.90	3.10	3.50	4.25	5.00	6.50
60. **HEAVY ORDINARY.** Per Roll, 50 Yards	3.75	4.00	4.50	5.40	6.20	7.50
70. **EXTRA HEAVY ORDINARY.** Per Roll, 50 Yards	4.60	5.00	5.50	6.60	7.85	9.00

UNPREPARED MOUNTED BLUE PRINT PAPER AND CLOTH.

	Ins. Width, 27	Ins. 30	Ins. 36	Ins. 42
80. **MOUNTED BLUE PRINT PAPER.** Per Roll, 10 Yards	$6.25	6.50	8.25	9.75
90. **BLUE PRINT CLOTH.** Per Roll, 10 Yards		3.00	3.50	4.50

SHEETS OF ANY SIZE CUT TO ORDER.

Special Prices per pound will be quoted upon application for Unprepared Papers in Original Rolls.

SAMPLE BOOK WILL BE SENT ON APPLICATION.

BLUE PRINTING DEPARTMENT.

We have large offices, fitted up expressly for making Prints by Blue Process, Black Process and Blue Lines on White Ground Process, both in Pittsburgh and Chicago. Copies will be made on any of the foregoing Papers or Cloth at low prices. Particular attention is paid to executing all orders with promptness and despatch, and prints will be made and shipped the day tracings are received, if weather permits. Out-of-town work is solicited.

WE MAKE A SPECIALTY OF PRINTS FROM EXTRA LARGE TRACINGS.

BLACK PRINT PAPER.

In producing this paper, it has been our aim to obtain one which would be thoroughly reliable, reasonable in price and easy to manipulate. We offer a paper possessing these qualities and a careful trial of the same will demonstrate that it is much superior to any other black process paper hitherto placed on the market.

The **"Acid Bath"** paper is recommended where fine jet black lines on a perfectly pure white ground are desired. It requires one extra bath, which should not be objectionable to those who wish the best results.

The **"Direct Black"** paper is just as reliable as that requiring the "Acid Bath" but the results are not so uniformly good, although the simple water bath development will recommend it to many who have not the facilities for, or object to, the use of an additional bath.

The papers are always freshly prepared when ordered and with a reasonable amount of care in keeping them from the effects of light and moisture, can be depended upon to retain their sensitiveness and produce excellent results for any **reasonable** length of time.

The "Prints" made from this paper are absolutely permanent and may **be altered, added to,** or **colored** the same as are original drawings.

BLACK PRINT PAPER.

91. REQUIRING ACID BATH FOR DEVELOPMENT.—EXTRA STRONG PAPER.

	Width, 27 ins.	30 ins.	36 ins.	42 ins.
Per Roll, 10 Yards, Sensitized	$1.75	2.00	2.50	3.00
" " 50 " "	7.50	9.00	11.00	13.50

92. ACID FOR DEVELOPING..........per pound, $1.50

BLACK PRINT PAPER.

93. REQUIRING WATER BATH ONLY FOR DEVELOPMENT.—EXTRA STRONG PAPER.

	Width, 27 ins.	30 ins.	36 ins.	42 ins.
Per Roll, 10 Yards, Sensitized	$2.00	2.25	2.85	3.40
" " 50 " "	8.75	10.25	12.75	15.25

CYANOTYPE PAPER.

94. PRODUCING BLUE LINES ON WHITE GROUND.

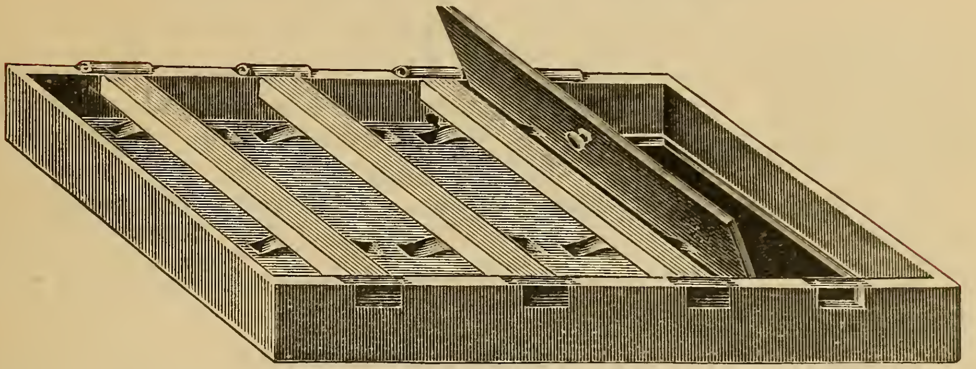
This is the only absolutely reliable process giving blue lines on a perfectly white ground. The paper being extremely sensitive, copies can be taken, in sunshine in from one to two minutes, and in dull weather in from twenty to thirty minutes, or more. The lines are permanent and the copies do not fade nor in any way deteriorate, even in tropical climates. Alterations may be made by using the special Erasing Fluid. The paper is guaranteed to retain its sensitiveness for at least twelve months in **any climate** and is **not affected by change of atmosphere.** One Water and two Chemical Baths are required for this process. The Chemical Baths, when once prepared, will suffice for the development of 100 copies or more. Send for sample print and descriptive circular.

EXTREMELY TOUGH PAPER.

	Width, 30 ins.	40 ins.
Per Roll, 10 Yards, Sensitized	$3.00	4.50

IMPROVED

BLUE PRINT FRAMES.



No. 95.

Frames made of **Hard Wood**, neatly finished with **Brass Mountings** fitted with **Elastic Felt Cushion** and Double Thick or Polished Plate Glass.

		Frames Only.	With Double Thick Glass.	With Polished Plate Glass.
95.	18 x 22	$ 5.75	$ 6.50	$ 8.50
	20 x 24	6.00	7.00	10.00
	24 x 30	7.75	9.00	12.00
	30 x 42	12.25	14.50	22.50
	36 x 60	20.00	25.00	42.50

Any size frames or different pattern made to order at short notice. Boxing extra. We are not responsible for breakage of Glass in shipping.

ELASTIC FELT CUSHION

For Blue Print Frames.

96. The best Felt Cushion for Blue Print Frames ever put upon the market. Every Frame should have one, for with it you can get good results in printing. Perfect *contact* is obtained and wrinkles are avoided. Any size Frame fitted to order. Can be furnished up to 72 inches wide and of any length.

Per square foot	$ .30

SAMPLE WILL BE SENT ON APPLICATION.

BATH TRAYS.

Zinc lined with drain pipe, strong wired rim and hard wood braces.

97.	Size, 20 x 24 inches	each	$3.75
	“ 24 x 30 “	“	4.50
	“ 30 x 42 “	“	6.00
	“ 36 x 60 “	“	8.00

TIN TUBES FOR PRESERVING PAPER.

98.	Length in inches	24	31	37	43
	Diameter “	3½	3½	3½	3½
	Each	$1.20	$1.40	$1.50	$1.75

ERASING FLUID.

99.	WHITE, for making alterations and additions to Blue Prints,	Per bottle,	$ .20	By Mail, $ .30
	ANY COLOR, for marking or tinting Blue Prints,	“	.25	“ “ .35
	For making alterations to Black Prints	“	.25	“ “ .35
	“ “ “ “ Cyanotype Prints	“	.25	“ “ 35

DESCRIPTION OF
DRAWING PAPERS.

Our assortment of drawing and tracing papers is complete, and varied to meet the requirements of every branch of work, having been very carefully selected after a personal inspection of all the papers made by the foreign manufacturers. It is, however, a difficult matter to describe these materials intelligently, and in consequence we invite inspection of our complete sample book, which will be sent upon application.

WHATMAN'S Hand-Made Papers are furnished by us in two different surfaces, viz., "H. P." and "N." "H. P." signifies Hot Pressed, and has a smooth surface: is mostly used for Pen and Pencil Drawings. "N." signifies Cold Pressed and has a finely grained surface; is mostly used for Pencil Drawing and Water Color Painting.

The **"LINDEN ROUGH" Detail Drawing Paper** is of a light buff color easy to the eye, with slightly grained surface especially adapted to detail work. It bears erasure clear through the sheet without the surface becoming rough or fuzzy, and can be drawn upon over erased portion without the ink spreading. It is hard and uniform throughout, and is recommended for shop drawings which require rough handling.

The **"LINDEN SMOOTH" Detail Drawing Paper** is also of a light buff color, easy to the eye, but with a **SMOOTH** surface, and possesses all of the excellent properties of the "Linden Rough" Paper. This paper is a favorite for fine mechanical drawings.

The **"SMOOTH MANILLA PAPERS"** are sometimes used for detail drawings, although not so recommended by us. Their use is principally confined to stone workers and pattern makers for stencils, gaskets, etc.

The **"IRON CITY" Detail Papers** are made for us by the most skillful paper manufacturer in America, and possess **remarkable erasing qualities** for a manilla paper. We recommend them as a vast improvement over any manilla detail paper now on the market. They will take India Ink and Water Colors equally as well as the best of White Drawing Papers.

The **"CLIMAX" Drawing Paper** is of **medium weight**, well sized, and of excellent quality, the surface being just a little grained, making it especially desirable for Ink, Pencil, Water Color or Crayon work. It is also highly recommended for School and College work. It is nearly pure white.

The **"DURANA" Drawing Papers** are very tough and pliable, with a slightly grained surface, and in consequence are very desirable for use in the shop or field where drawings require much handling.

The **"HERCULES" Drawing Paper** has a **smooth surface**, exceedingly hard and tough, being the strongest and most durable made. For drawings in constant use, this paper is unsurpassed, and may be rolled or folded, without breaking.

The **"LENOX" Drawing Papers** are the finest continuous roll drawing papers made, the stock being especially selected for this paper and manufactured with the utmost care. The Rough (or Eggshell) Surface Papers are especially desirable for maps, finished drawings, or water color sketches. The Smooth Surface Papers are especially suitable for pen and ink drawings, sketches, or work to be photographed. They will retain their pliability indefinitely and the erasing qualities are unsurpassed.

SAMPLE BOOK OF DRAWING PAPERS WILL BE SENT ON APPLICATION.

DRAWING PAPERS.

(SEE DESCRIPTION ON PAGE 6.)

With the exception of Whatman's, we do not **list** Drawing Papers **in sheets,** owing to the varying requirements as to size, but **will be glad to furnish special prices** upon application for **any size or quality** desired.

WHATMAN'S HAND-MADE.

SELECTED BEST.

		SIZE.	PER SHEET.	PER QUIRE.
110.	Cap, H. P. and N	13 × 17 Ins.	$ .04	$ .65
	Demy, H. P. and N	15 × 20	.05	.90
	Medium, H. P. and N	17 × 22	.08	1.35
	Royal, H. P. and N	19 × 24	.10	1.70
	Super-Royal, H. P. and N	19 × 27	.12	2.00
	Imperial, 72 lbs. per ream, H. P. and N	22 × 30	.14	2.85
	Atlas, H. P. and N	26 × 34	.20	4.50
	Double Elephant, H. P. and N	27 × 40	.25	5.25
	Antiquarian, H. P. and N	31 × 53	1.25	24.00

SPECIAL PRICES IN REAM LOTS.

WHATMAN'S EXTRA HEAVY.

SELECTED BEST.

		SIZE.	PER SHEET.	PER QUIRE.
111.	Imperial, 90 lbs. per ream, H. P. and N	22 × 30 Ins.	$ .20	$ 4.25
	" 140 " " " " "	22 × 30	.30	6.50
	" 300 " " " N	22 × 30	.80	....
	Double Elephant, 260 lbs. per ream, N	27 × 40	.75	....

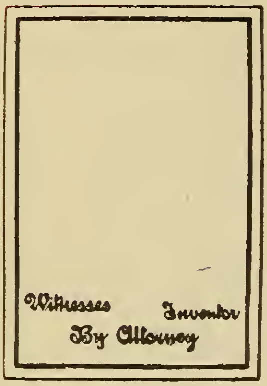
MOUNTED WHATMAN'S PAPER.

SELECTED BEST.

		SIZE.	PER SHEET.	PER QUIRE.
112.	Royal	19 × 24 Ins.	$ .35	$ 7.50
	Imperial	22 × 30	.45	10.00
	Double Elephant	27 × 40	.70	16.50
	Antiquarian	31 × 53	1.80	....

BRISTOL BOARDS.

PATENT OFFICE BRISTOL BOARDS.



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This Bristol Board possesses all the requirements of the U. S. Patent Office. It is pure white, has a very hard surface and possesses superior erasing qualities.

EACH SHEET
Stamped with our Trade Mark.

	Size.	Each.	Per Doz.	Per Gross.
113.	3 ply, 10 × 15 inches, blank (U. S. Standard)...	$ .06	.60	6.50
	3 " 15 × 20 " " (English ")...	.12	1.20	13.00

THE SAME PRINTED WITH BORDER.

	Size.	Each.	Per Doz.	Per Gross
114.	3 ply, 10 × 15 inches..	$ .07	.80	8.65

DOMESTIC BRISTOL BOARD.

EXTRA FINE QUALITY.

	Size.	Each.	Per Doz.
115.	2 ply, 22 × 28 inches..	$ .10	1.00
	3 " 22 × 28 "	.15	1.50
	4 " 22 × 28 "	.25	2.50

REYNOLD'S ENGLISH BRISTOL BOARD.

SUPERFINE QUALITY.

			Two Ply.		Three Ply.		Four Ply.	
		Size.	Per Sheet.	Per Doz.	Per Sheet.	Per Doz.	Per Sheet.	Per Doz.
116.	Cap........	12½×15¼...	$ .06	.55	.08	.85	.10	1.10
	Demy....	14⅝×18¼...	.08	.85	.12	1.25	.16	1.65
	Medium.	16½×20¾...	.12	1.15	.16	1.70	.22	2.30
	Royal....	18¼×22⅜...	.15	1.40	.22	2.25	.30	2.90
	Imperial	21½×28¾...	....	......	.45	4.25	.55	5.75

DRAWING PAPERS.

(See Description on Page 6.)

"LINDEN ROUGH" DETAIL DRAWING PAPER.

		In 30 to 40 lb. Rolls. Per Pound.	Per Roll of 10 Yards.	Per Yard.
100.	36 inches wide...........................	$0.25	1.10	0.15
101.	42 " "	.25	1.50	.20
102.	54 " "	.25	2.00	.25

"LINDEN SMOOTH" DETAIL DRAWING PAPER.

		In 30 to 40 lb. Rolls. Per Pound.	Per Roll of 10 Yards.	Per Yard.
103.	36 inches wide...............................	$0.25	1.10	0.15
104.	42 " "	.25	1.50	.20
105.	54 " "	.25	2.00	.25

"IRON CITY" DETAIL PAPER, THIN.

		Width, 36-inch.	42-inch.	48-inch.
170.	Per roll of 20 yards.........................	$1.00	1.25	1.50
	" " 50 "	2.25	2.75	3.25
	" " 100 "	4.00	5.00	6.00
	In rolls of about 50 pounds, each..		Per pound,	.15
	" " 125 " "		" "	.12

"IRON CITY" DETAIL PAPER, MEDIUM.

		Width, 36-inch.	42-inch.	48-inch.
180.	Per roll of 20 yards.........................	$1.20	1.50	1.75
	" " 50 "	2.75	3.25	3.75
	" " 100 "	5.00	6.00	7.00
	In rolls of about 50 pounds, each..		Per pound,	.15
	" " 125 " "		" "	.12

"IRON CITY" DETAIL PAPER, HEAVY.

		Width, 36-inch.	42-inch.	48-inch.
200.	Per roll of 20 yards.........................	$1.50	2.00	2.25
	" " 50 "	3.50	4.25	5.00
	" " 100 "	6.25	7.50	8.50
	In rolls of about 50 pounds, each..		Per pound,	.15
	" " 125 " "		" "	.12

SMOOTH "MANILLA" PAPERS.

			Width, 36, 44, 48 and 54 inches, per lb.
209.	X,	In rolls only, of about 100 pounds, each..................................	$0.10
210.	XX	" " " 100 " "	.10
211.	XXX,	" " " 100 " "	.10
212.	XXXX,	" " " 100 " "	.10

(See Description of Above on Page 6.)

SAMPLE BOOK OF DRAWING PAPERS WILL BE SENT ON APPLICATION.

DRAWING PAPERS—CONTINUED.

(SEE DESCRIPTION ON PAGE 6.)

"CLIMAX" DRAWING PAPER.

		In 30 to 40 lb. rolls, per pound.	Per roll of 10 yds.	Per yard.
545.	36 inches wide	$ .35	1.60	.20
546.	42 " "	.35	1.85	.24
547.	58 " "	.35	2.85	.30

"DURANA" DRAWING PAPER, MEDIUM.

		In 30 to 40 lb. rolls, per pound.	Per roll of 10 yds.	Per yard
550.	60 inches wide	$ .40	3.75	.40

"DURANA" DRAWING PAPER, THICK.

		In 30 to 40 lb. rolls, per pound.	Per roll of 10 yds.	Per yard.
555.	36 inches wide	$ .40	2.75	.35
556.	60 " "	.40	4.35	.50

"HERCULES" DRAWING PAPER.

		In 30 to 40 lb. rolls, per pound.	Per roll of 10 yds.	Per yard.
560.	36 inches wide	$ .45	2.95	.35
561.	62 " "	.45	4.90	.55

"LENOX" SMOOTH MEDIUM DRAWING PAPER.

		In 30 to 40 lb. rolls, per pound.	Per roll of 10 yds.	Per yard.
565.	36 inches wide	$ .45	2.85	.33
566.	42 " "	.45	3.25	.36
567.	58 " "	.45	4.20	.47

"LENOX" THICK SMOOTH DRAWING PAPER.

		In 30 to 40 lb. rolls, per pound.	Per roll of 10 yds.	Per yard.
575.	36 inches wide	$ .45	3.35	.40
576.	42 " "	.45	4.00	.50
577.	58 " "	.45	5.40	.65

"LENOX" MEDIUM ROUGH DRAWING PAPER.

(EGGSHELL.)

		In 30 to 40 lb. rolls, per pound.	Per roll of 10 yds.	Per yard.
585.	36 inches wide	$ .45	2.85	.33
586.	42 " "	.45	3.25	.36
587.	58 " "	.45	4.20	.47

"LENOX" THICK ROUGH DRAWING PAPER.

(EGGSHELL.)

		In 30 to 40 lb. rolls, per pound.	Per roll of 10 yds.	Per yard.
595.	36 inches wide	$ .45	3.35	.40
596.	42 " "	.45	4.00	.50
597.	58 " "	.45	5.40	.65

(SEE DESCRIPTION OF ABOVE ON PAGE 6.)

SAMPLE BOOK OF DRAWING PAPERS WILL BE SENT ON APPLICATION.

DRAWING PAPERS—CONTINUED.

Mounted on Muslin.

(SEE DESCRIPTION ON PAGE 6.)

"LINDEN ROUGH" DETAIL DRAWING PAPER,

Mounted.

150.	36 inches wide, per roll of 10 yards	$5.00	Per yard, $0.65
151.	42 " " " 10 "	6.10	" .80
152.	54 " " " 10 "	8.00	" 1.05

"LINDEN SMOOTH" DETAIL DRAWING PAPER

Mounted.

153.	36 inches wide, per roll of 10 yards	$5.00	Per yard, $0.65
154.	42 " " " 10 "	6.10	" .80
155.	54 " " " 10 "	8.00	" 1.05

"CLIMAX" DRAWING PAPER,

Mounted.

645.	36 inches wide, per roll of 10 yards	$5.40	Per yard, $0.70
646.	42 " " " 10 "	6.80	" .85
647.	58 " " " 10 "	9.50	" 1.20

"LENOX SMOOTH" MEDIUM DRAWING PAPER

Mounted.

665.	36 inches wide, per roll of 10 yards	$7.50	Per yard, $1.00
666.	42 " " " 10 "	8.85	" 1.10
667.	58 " " " 10 "	11.75	" 1.40

"LENOX" THICK SMOOTH DRAWING PAPER,

Mounted.

677.	58 inches wide, per roll of 10 yards	$13.00	Per yard, $1.60

"LENOX" MEDIUM ROUGH DRAWING PAPER,

(Eggshell) Mounted.

685.	36 inches wide, per roll of 10 yards	$7.50	Per yard, $1.00
686.	42 " " " 10 "	8.85	" 1.10
687.	58 " " " 10 "	11.75	" 1.40

"LENOX" THICK ROUGH DRAWING PAPER,

(Eggshell) Mounted.

697.	58 inches wide, per roll of 10 yards	$13.00	Per yard, $1.60

The "Linden" Drawing Paper Nos. 150, 151, 152, 153, 154 and 155 are Nos. 100, 101, 102, 103, 104 and 105 respectively, mounted. The "Climax" Drawing Paper Nos. 645, 646 and 647 are Nos. 545, 546 and 547 respectively, mounted. The "Lenox" Drawing Paper Nos. 665, 666, 667, 677, 685, 686, 687 and 697 are Nos. 565, 566, 567, 577, 585, 586, 587 and 597 respectively, mounted.

(SEE DESCRIPTION ON PAGE 6.)

TRACING PAPERS.

415.	**"IRON CITY,"** buff tint, unprepared, thin.		
	48 inches wide, rolls of 100 yards	Per roll,	$3.00
	"CRESSON," white parchment, dull finish, thin.		
420.	36 inches wide, rolls of 22 yards	"	1.25
421.	42 " " " 22 "	"	1.75
422.	**"NATURAL BOND,"** glazed.		
	42 inches wide, rolls of 20 yards	"	2.00
423.	**"UNGLAZED NATURAL,"** for either tracing or transferring.		
	57 inches wide, rolls of 22 yards	"	2.50
	57 " " " 44 "	"	5.00
425.	**"FRENCH BOND,"** for either tracing or drawing.		
	39 inches wide, rolls of 11 yards	"	3.75

Particular attention is directed to the No. 425, "French Bond" Tracing and Drawing Paper, which is especially recommended for drawings which require rough handling or exposure to the weather, and from which prints may be made direct. It is unaffected by water, does not lose any of its toughness when wet, and will not shrink. Its great transparency, ALONE, makes it far superior to the ordinary Bond Paper.

430.	**"ATLAS,"** medium, glazed.		
	39 inches wide, rolls of 20 yards	Per roll,	$2.00
435.	**"ROYAL" THIN PARCHMENT,** glazed, very transparent.		
	43 inches wide, rolls of 22 yards	"	2.50
436.	**"ROYAL" MEDIUM PARCHMENT,** glazed, very transparent.		
	39 inches wide, rolls of 20 yards	"	3.25
437.	**"ROYAL" HEAVY PARCHMENT,** glazed, very transparent.		
	39 inches wide, rolls of 20 yards	"	3.25
438.	**"OTHELLO," THIN,** transparent and tough.		
	43 inches wide, rolls of 20 yards	"	1.50
439.	**"OTHELLO" MEDIUM THICK,** transparent and tough.		
	43 inches wide, rolls of 20 yards	"	2.00

SAMPLE BOOK WILL BE SENT ON APPLICATION.

TRANSPARENT
SKETCHING PAPER.

The following three papers are especially adapted to sketching, tracing, etc. To those who desire to make their details on strong, tough, transparent white paper, which bears erasure well, and takes pencil, ink and water colors perfectly, these papers are especially recommended. They are also adapted to use in connection with the Moonstone, Hektograph Slates, etc. Blue prints can readily be made from drawings made on these papers.

"IMPERIAL"

Sketching and Tracing Paper.

440.	56 inches wide, rolls of 10 yards	Per roll, $2.00
	56 " " " 50 "	" 6.50
	56 " " " 100 "	" 12.50

"STANDARD"

Medium Sketching and Tracing Paper.

445.	60 inches wide, rolls of 10 yards	Per roll, $1.10
	60 " " " 50 "	" 3.25
	60 " " " 100 "	" 6.30

"STANDARD"

Heavy Sketching and Tracing Paper.

446.	60 inches wide, rolls of 10 yards	Per roll, $1.30
	60 " " " 50 "	" 4.25
	60 " " " 100 "	" 8.25

SAMPLE BOOK WILL BE SENT ON APPLICATION.

TRACING CLOTHS (VELLUM.)

EXCELSIOR.

Glazed on one Side, Dull on the Other.

475.	30 inches wide, rolls of 24 yards	Per roll, $7.60
	36 " " " 24 "	" 8.25
	42 " " " 24 "	" 11.00

IMPERIAL.

Glazed on one Side, Dull on the Other.

476.	30 inches wide, rolls of 24 yards	Per roll, $6.90
	36 " " " 24 "	" 7.60
	42 " " " 24 "	" 10.50
	54 " " " 24 "	" 15.00

RELIANCE.

Glazed on one Side, Dull on the Other.

477.	30 inches wide, rolls of 24 yards	Per roll, $6.00
	37 " " " 24 "	" 7.00
	40 " " " 24 "	" 8.40
	43 " " " 24 "	" 9.80

PROFILE PAPERS.

PRINTED IN RED OR GREEN.

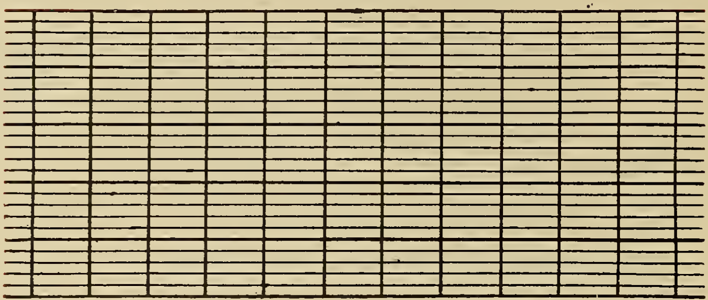


Plate A, 4 × 20 to one inch.

Horizontal divisions, four to the inch; vertical divisions, twenty to the inch, and having every tenth horizontal division line and every fiftieth vertical division line heavier than the others.

700. Plate A, in sheets, engraving 42 inches long by 15 inches wide, per quire, $8.50; per sheet, 40 cents.
701. Plate A, in continuous rolls, engraving 22 inches wide, in rolls of 50 yards; per yard, 30 cents.
702. Plate A, in continuous rolls, mounted on muslin, engraving 22 inches wide, in rolls of 20 yards; per yard, 75 cents.
703. Plate A, in sheets, on Tracing Paper, ruling 42 × 15 inches; per quire, $20.00; per sheet, $1.00.
704. Plate A, in continuous rolls printed on Transparent Parchment Paper, 22 inches wide, in rolls of 50 yards; per yard, 30 cents.

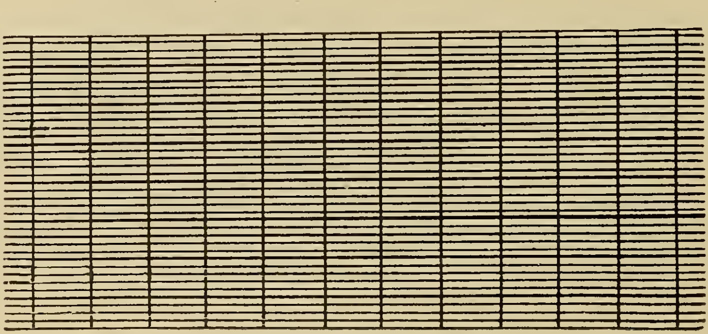


Plate B, 4 × 30 to one inch.

Horizontal divisions, four to the inch; vertical divisions, thirty to the inch, and having every fourth horizontal division line and every twenty-fifth vertical division line heavier than the others.

705. Plate B, in sheets, engraving 42×15 ins.; per quire, $8.50; per sheet, 40c.
706. Plate B, continuous, engraving 20 inches wide, in rolls of 50 yards, per yard, 30 cents.
707. Plate B, mounted on muslin, engraving 20 inches wide, in rolls of 20 yards; per yard, 75 cents.
708. Plate B, printed on Transparent Parchment Paper, 22 inches wide, in rolls of 50 yards; per yard, 30 cents.
709. Plate B, in sheets, on Tracing Paper, ruling 42 × 15 inches; per quire, $20.00; per sheet, $1.00.

PLEASE STATE COLOR WHEN ORDERING ABOVE PAPERS.

PROFILE PAPERS—CONTINUED.

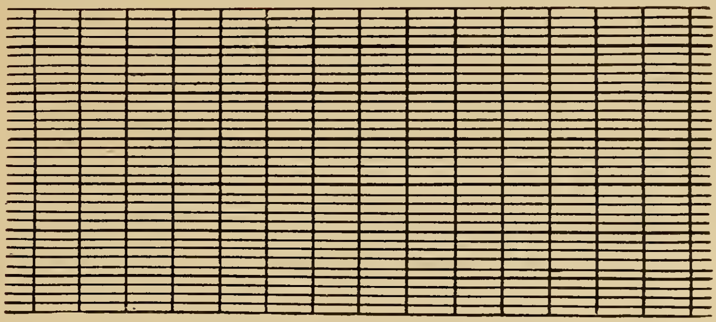


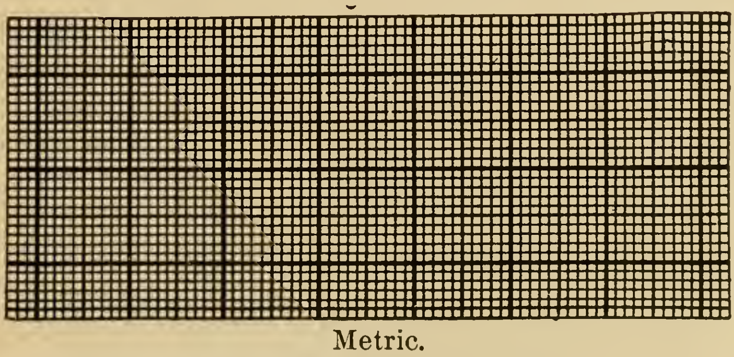
Plate C, 5 × 25 to one inch.

Horizontal divisions, five to the inch ; vertical divisions, twenty-five to the inch, and having every fifth horizontal division line and every twenty-fifth vertical division line heavier than the others.

710. In sheets, engraving 15 × 42 inches... Per Quire, $8.50. Per Sheet, $0.40

CROSS SECTION PAPERS.

PRINTED IN RED OR GREEN.



Metric.

Metric in millimetres, with each fifth millimetre, each centimetre, and each decimetre proportionately heavier than the millimetres.

711. In continuous rolls, engraving 50 centimetres wide, in rolls of 20 yards.. Per yard, $0.30
712. In continuous rolls, mounted on muslin, engraving 50 centimetres wide, in rolls of 20 yards.......................... " .75
713. In sheets, engraving 40 × 50 centimetres. Per Quire, $5.00. Per sheet, .25

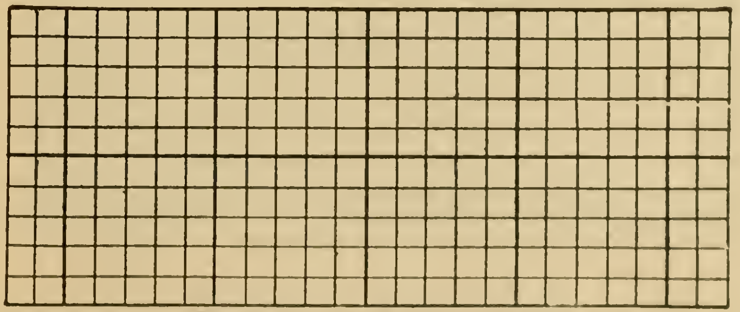


Plate D, 8 feet to the inch.

714. In sheets, engraving 20 × 16 inches......Per Quire, $5.00. Per Sheet, $0.25

PLEASE STATE COLOR WHEN ORDERING ABOVE PAPERS.

CROSS SECTION PAPER—CONTINUED.

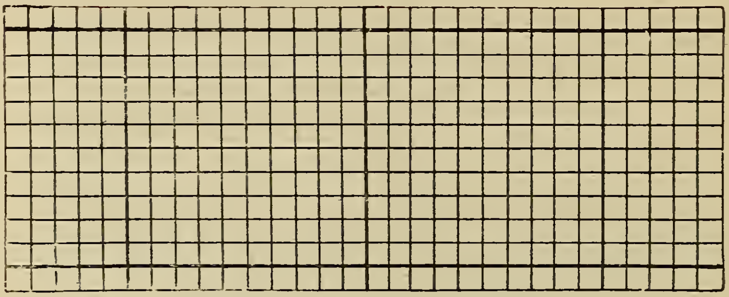


Plate F, 10 × 10 to the inch.

715.	In sheets, engraving 20 × 16 inches......	Per Quire, $5.00.	Per Sheet, $0.25
716.	" " 20 × 16 " on Tracing Paper..................................	" 5.00.	" .25
717.	Continuous, 20 inches wide, in rolls of 50 yards..........		Per Yard, .30
718.	Continuous, 20 inches wide, in rolls of 20 yards, mounted on muslin		" .75
719.	Continuous, 20 inches wide, in rolls of 50 yds on Tracing Paper, orange only...		" .30

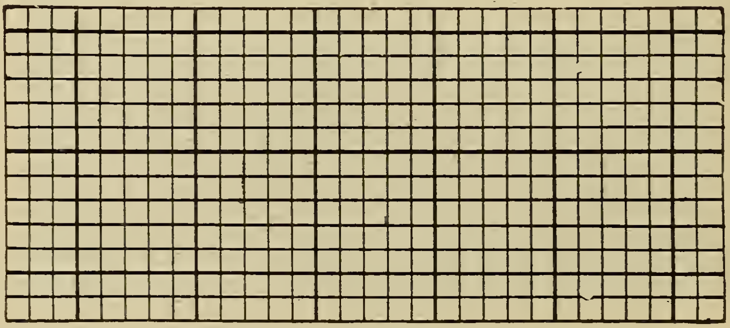


Plate G, 5 × 5 to ½ inch.

720.	In sheets, engraving 22 × 16 inches......	Per Quire, $5.00.	Per Sheet, $0.25
721.	Printed on Parchment Tracing Paper, in sheets, 18 × 20 inches....................	" 5.00.	" .25

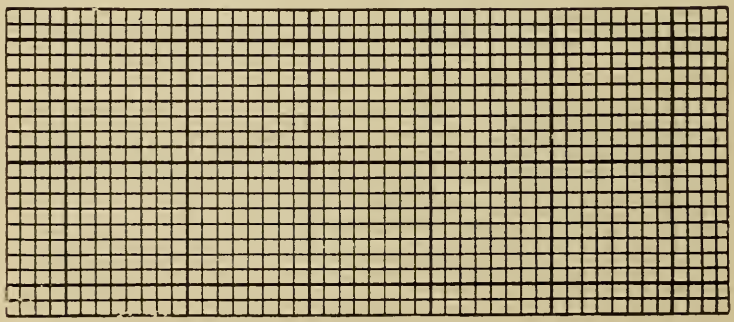
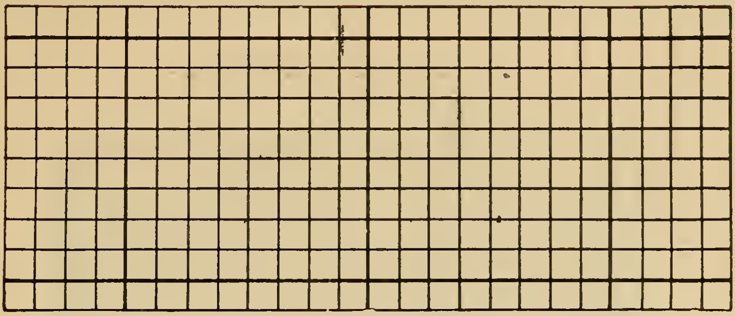


Plate H, 16 × 16 to the inch.

722.	In sheets, engraving 21 × 16 inches......	Per Quire, $5.00.	Per Sheet, $0.25
723.	" on Tracing Paper.................	" 5.00.	" .25

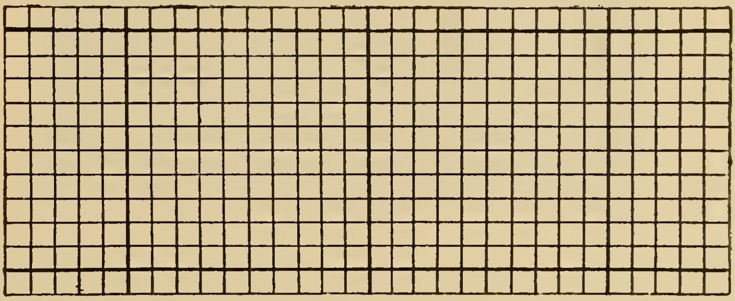
PLEASE STATE COLOR WHEN ORDERING ABOVE PAPERS.

CROSS SECTION PAPERS, RULED.



8 X 8 to the Inch.

724. In sheets, 16 X 21 inches, ruled in blue.......................... Per Quire, $1.00

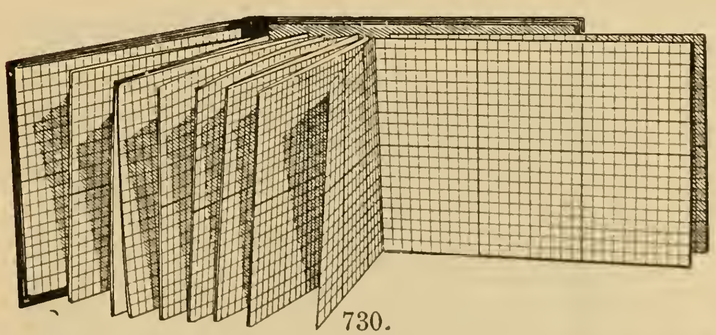


10 X 10 to the inch.

725. In sheets, 16 X 21 inches, ruled in blue.......................... Per Quire, $1.00

CONTINUOUS PROFILE BOOKS.

WITH LEATHER COVER.



730.

These books are folded like a map, to replace the continuous rolls of profile paper, and the pages are mounted on muslin.

Each leaf, or two pages facing, contain six thousand feet—a "Section"—as generally laid out for the construction of a road. The paper lays smooth and is of extra fine quality.

730. Plate A—4 horizontal, 20 vertical lines to the inch: $5\frac{1}{2}$ X 8 in. Printed in Green.

Miles........	10	15	25	50	100
Each.........	$2.00	2.50	3.00	5.00	8.00

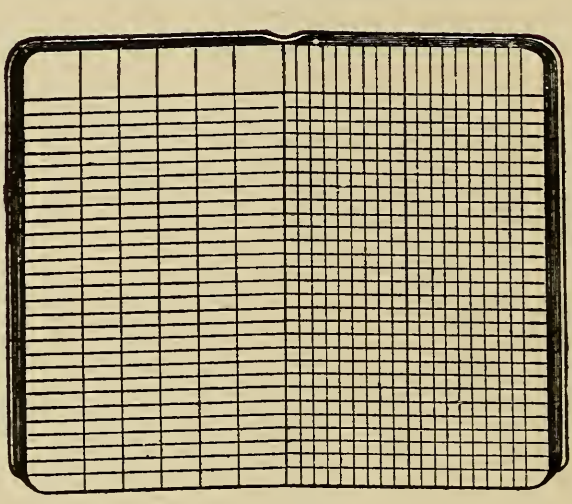
731. Plate B—4 horizontal, 30 vertical lines to the inch: $4\frac{3}{4}$ X 8 in. Printed in Green.

Miles........	10	15	25	50	100
Each.........	$2.00	2.50	3.00	5.00	8.00

The above books can also be furnished in Metric ruling. Write for special prices. We can also furnish Profile Books (not continuous) Plate A or B, printed in Green, and will be pleased to quote special prices.

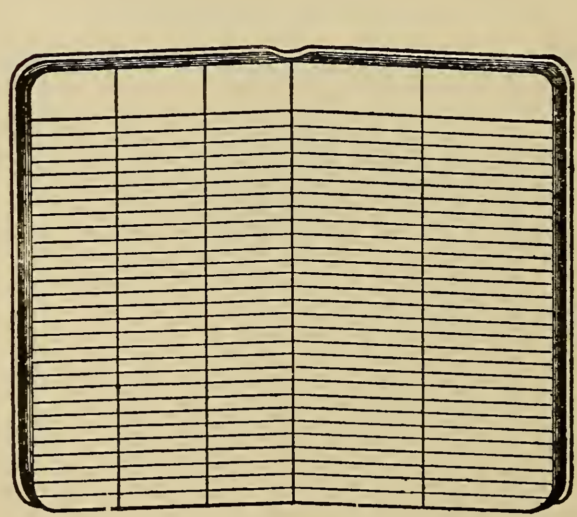
ENGINEERS' FIELD BOOKS.

BOUND IN LEATHER.



735

		Per Doz.	Each.
735.	Field Book, 4½ × 7½ inches, 80 leaves smooth paper.........	$6.00	0.55
736.	“ “ 4½ × 7½ “ 60 “ “ “	5.00	.45
737.	“ “ 4½ × 7½ “ 60 “ drawing paper.......	6.00	.55

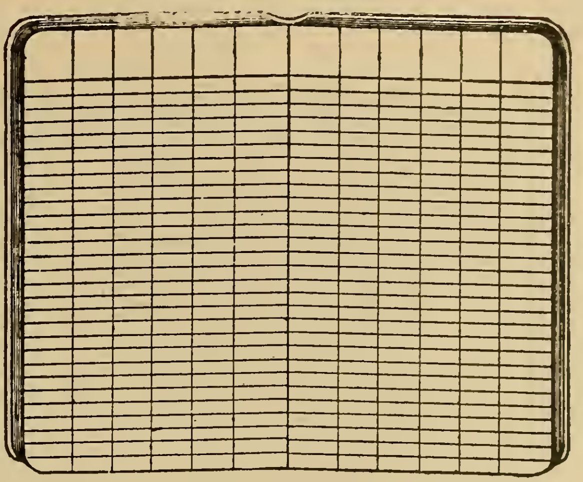


738

		Per Doz.	Each.
738.	Level Book, 4 × 6½ inches, 80 leaves smooth paper...........	$5.50	0.50
739.	“ “ 4 × 6½ “ 60 “ “ “	4.50	.40
740.	“ “ 4 × 6½ “ 60 “ drawing paper.........	5.50	.50

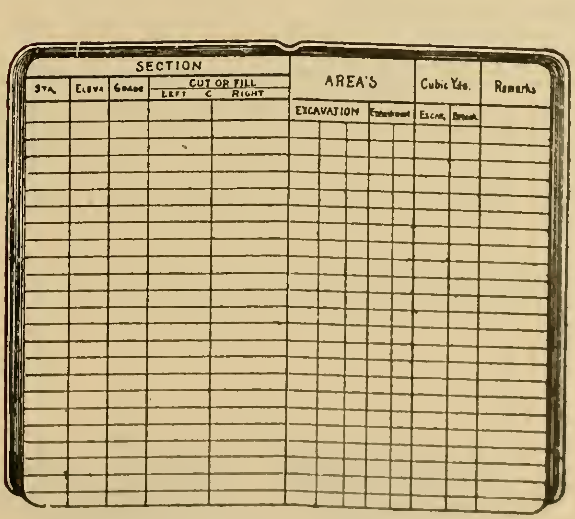
ENGINEERS' FIELD BOOKS.

(CONTINUED.)



741

		Per Doz.	Each.
741.	Transit Book, 4½ × 7½ inches, 80 leaves smooth paper......	$6.00	0.55
742.	" " 4½ × 7½ " 60 " " "	5.00	.45
743.	" " 4½ × 7½ " 60 " drawing paper.....	6.00	.55

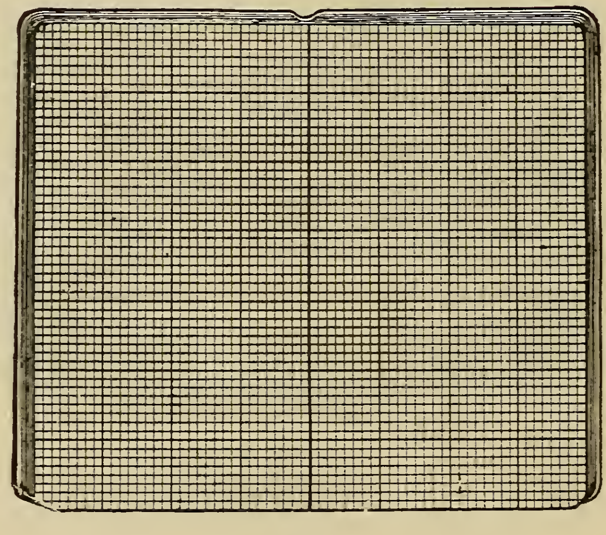


744

		Per Doz.	Each.
744.	Field Book, 5 × 7¾ inches, 80 leaves, with printed heading and smooth paper..	$9.00	0.80

ENGINEERS' FIELD BOOKS.

(CONTINUED.)



745

		Per Doz.	Each.
745.	Cross-Section Book, 4½ × 7½ inches, 80 leaves....................	$6.00	0.55
746.	" " 7 × 8¼ " 80 "	9.50	.85

We make to order any other style of Field and Cross-Section Books in lots of six dozen of one kind only.

TRAUTWINE'S
CROSS-SECTION AND DIAGRAM PAPER.

For embankments 14 and 24 feet roadway, and for excavations of 18 and 28 feet.

		Per Quire.	Per Sheet.
747.	In sheets, engraving 19¾×12 ins., 10 feet to the inch.....	$5.00	0.25

"LENOX"

GENUINE SUPERIOR SWISS

DRAWING INSTRUMENTS.

The instruments presented under the name of "LENOX" are manufactured expressly for us by the oldest and most skillful instrument manufacturer in Switzerland, and we have no hesitancy in recommending them as superior to any instrument now on the market.

The materials used are of the highest grade German Silver and English Steel, and the finish and workmanship of the best to be obtained at any price.

To those who wish instruments for work of precision and that can be relied upon to give constant and perfect satisfaction, we offer this grade knowing that a trial will demonstrate what we claim.

The instruments are made in two styles, the well known tongue joint and the pivot joint head, both styles being perfect of the kind, and the selection can be made to suit the individual taste of the purchaser.

Referring to cases of instruments illustrated, we have selected such as are most in demand, but can furnish any desired combination of instruments in cases promptly.

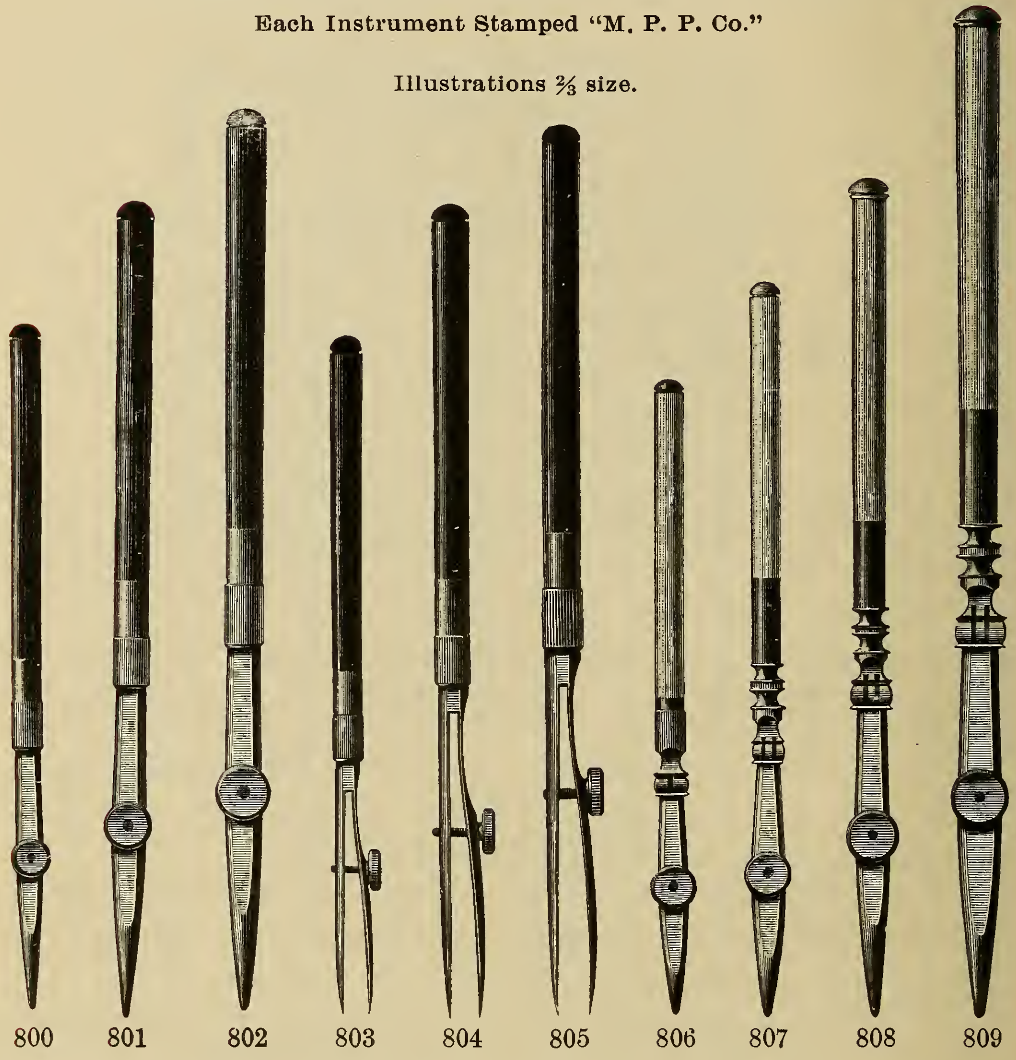
"LENOX"

GENUINE SUPERIOR SWISS DRAWING INSTRUMENTS.

OF BEST GERMAN SILVER AND ENGLISH STEEL.

Each Instrument Stamped "M. P. P. Co."

Illustrations ⅔ size.



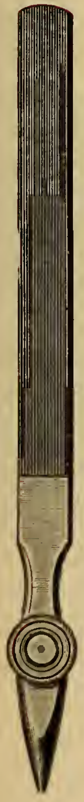
800.	Drawing Pen, Ebony Handle, 4½ inch	each,	$1.00
801.	“ “ “ “ 5 “	“	1.10
802.	“ “ “ “ 5½ “	“	1.25
803.	“ “ upper blade with spring, Ebony Handle, 4½ in.	“	1.10
804.	“ “ “ “ “ “ “ “ 5 “	“	1.20
805.	“ “ “ “ “ “ “ “ 5½ “	“	1.35
806.	“ “ with joint, Ivory Handle, 4 inch	“	1.40
807.	“ “ “ “ and pin, Ivory Handle, 4¾ inch	“	1.60
808.	“ “ “ “ “ “ “ “ 5½ “	“	1.80
809.	“ “ “ “ “ “ “ “ 6½ “	“	2.00
810.	“ “ with German Silver blades for red ink 5½ inch.	“	1.80

Drawing Pens, No. 800 to No. 805, with Aluminum Handles, 15 cts. extra.

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

Illustrations ⅔ size.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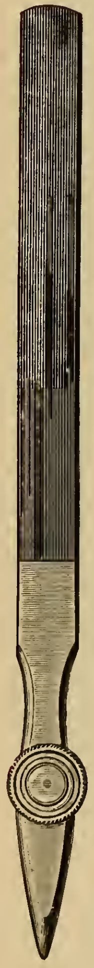
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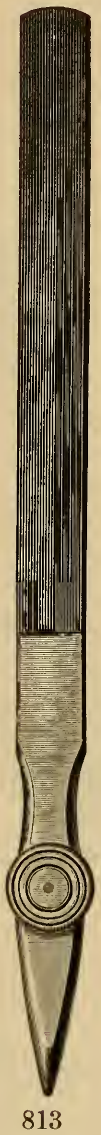
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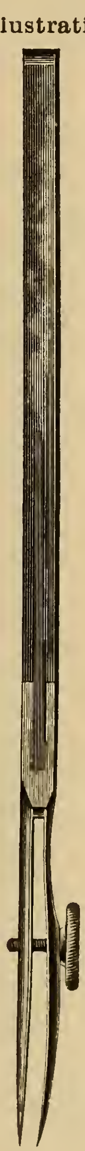
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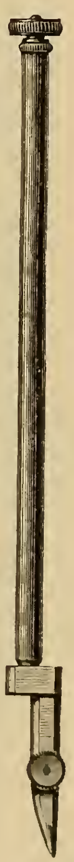
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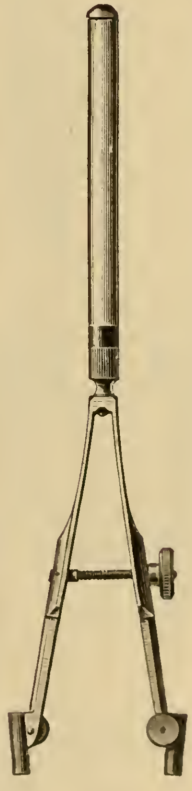
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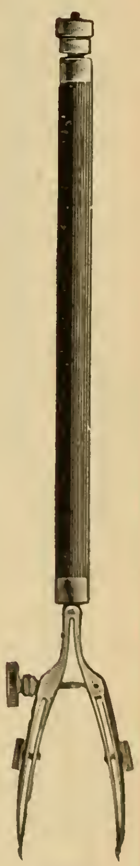
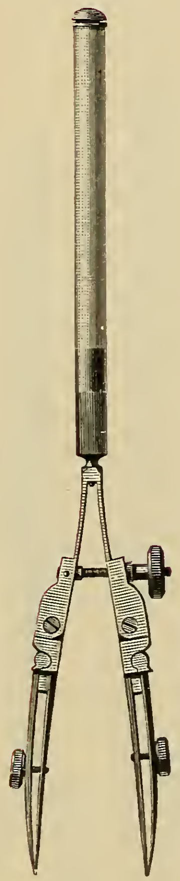

818A

811.	Swedish Style Drawing Pen, Ebony Handle, 5 inch............	each,	$ 1.40
812.	" " " " " " 6 "	"	1.60
813.	" " " " " " 7 "	"	1.80
814.	" " " " upper blade with Spring, Ebony Handle, 5 inch	"	1.80
815.	" " " " " " " " " " 6 "	"	2.00
816.	" " " " " " " " " " 7 "	"	2.20
817.	Curve Pen, German Silver Handle, 5½ inch.........................	"	2.40
818.	Railroad Pencil, Ivory Handle, 5 inch.............	"	3.25
818A.	Railroad Curve Pen, Ebony Handle, 5 inch.........................	"	5.00

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

Illustrations ⅔ size.



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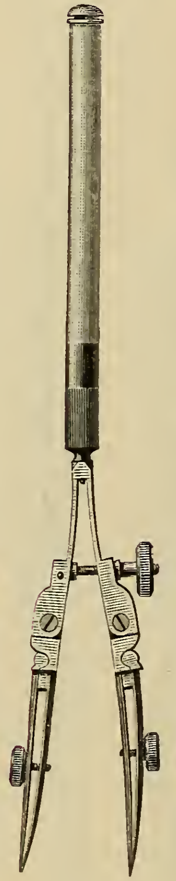

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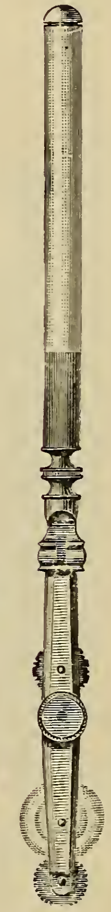

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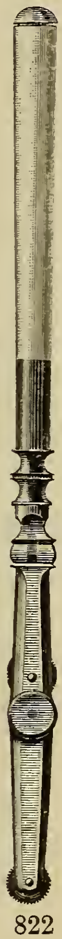

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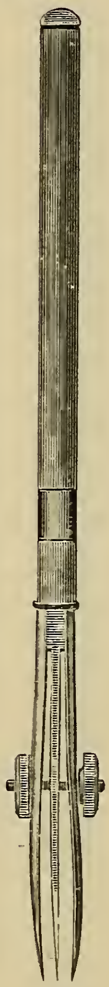

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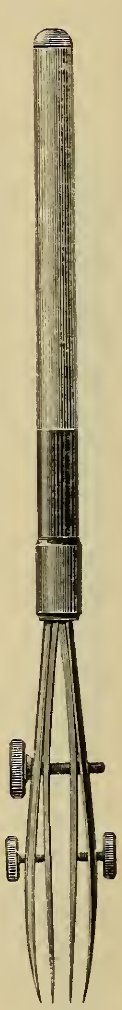

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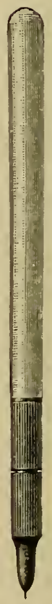

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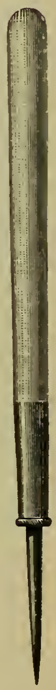


826

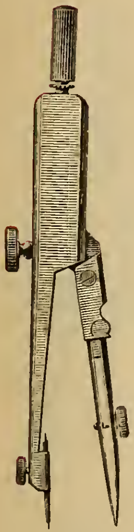
819.	Railroad Pen with joints to blades and in shanks, Ivory Handle, 5½ inch	each,	$3.50
820.	" " with joints to blades and in shanks, improved, having both pens bent in the same direction, Ivory Handle, 5½ inch	"	3.75
821.	Dotting Pen with 6 Wheels, Ivory Handle, 6 inch	"	3.75
822.	" " " 6 " improved, with reservoir for ink, with Ivory Handle, 6 inch	"	4.25
823.	Border Pen, for broad lines, Ivory Handle, 6½ inch	"	3.00
824.	" " " " " " " 6½ "	"	3.50
	No. 824 may also be used as Railroad Pen.		
825.	Pricker, Ivory Handle	"	1.75
826.	Tracer, " "	"	.90

SEE PAGE 38 FOR DOTTING INSTRUMENT.

“LENOX” SWISS INSTRUMENTS.

Each Instrument Stamped “M. P. P. Co.”

Illustrations ⅔ size.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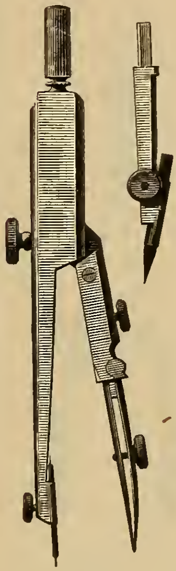
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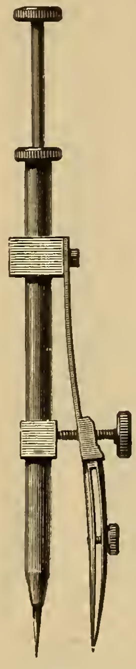
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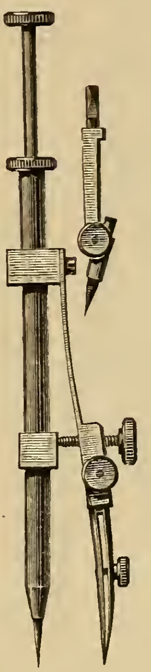
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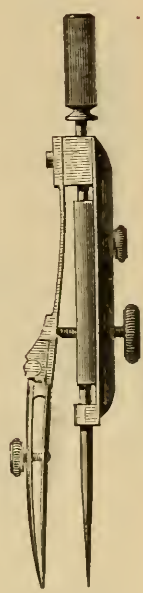
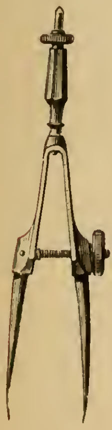

833½

830.	Bow Pen, with spring and adjusting screw	each,	$2.50
831.	“ “ “ “ “ “ “ and Pencil Point	“	3.50
832.	Spring Bow Pen, self-adjusting	“	3.75
833.	“ “ “ with Pencil Point, self-adjusting	“	5.00
833½	Spring Bow Pen, self-adjusting	“	4.25
	Morocco Cases for Nos. 830 to 833½	“	.60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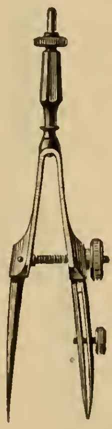
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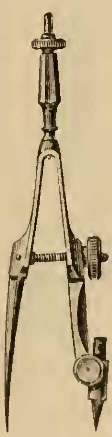
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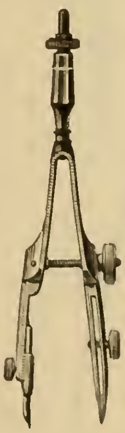
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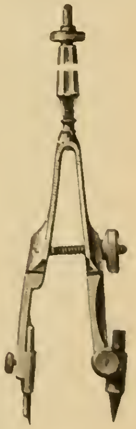
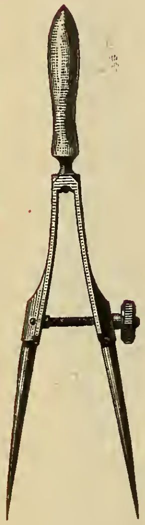

838

834.	Minute Steel Spring Bow Dividers, with Metal Handle,	2½ in.,	each,	$2.00
835.	“ “ “ Bow Pen, “ “ “	2½ “	“	2.50
836.	“ “ “ Bow Pencil, “ “ “	2½ “	“	2.50
837.	“ “ “ Bow Pen, with Needle Point, “ “	2½ “	“	2.85
838.	“ “ “ Bow Pencil, “ “ “	2½ “	“	2.85
839.	“ “ “ Bows, Set of 3, Nos. 834, 835 and 836 in Morocco Case, lined with Silk Velvet,		Set,	7.80
840.	“ “ “ “ “ 834, 837 and 838 “ “		“	9.35

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

Illustrations ⅔ size.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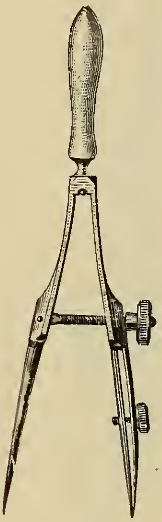
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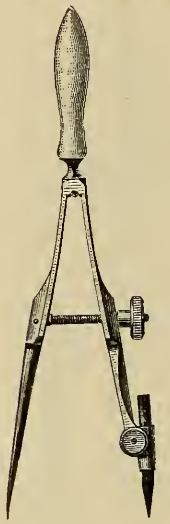
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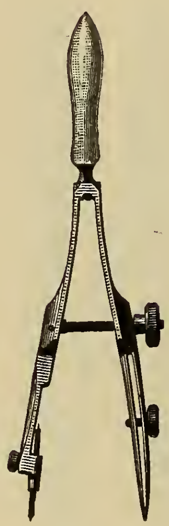
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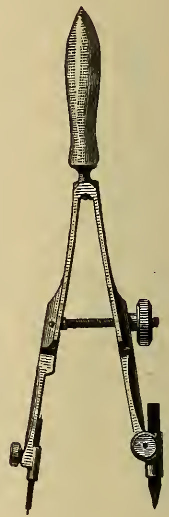
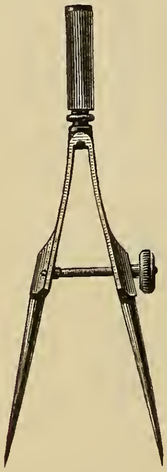

845

841.	Steel Spring Bow Dividers, with Ivory Handle, 3 inch	each,	$2.00
842.	" " Bow Pen, " " " 3 "	"	2.50
843.	" " Bow Pencil, " " " 3 "	"	2.50
844.	" " Bow Pen, with Needle Point, Ivory Handle, 3 "	"	2.85
845.	" " Bow Pencil, " " " 3 "	"	2.85
846.	" " Bows, Set of 3, Nos. 841, 842, and 843 in Morocco Case, lined with Silk Velvet,	set,	7.90
847.	" " " " " 841, 844 and 845, " " " "	"	8.60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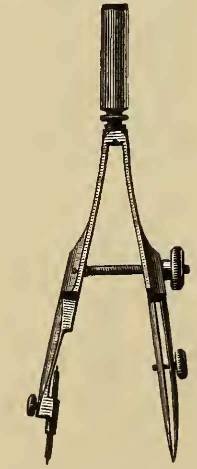
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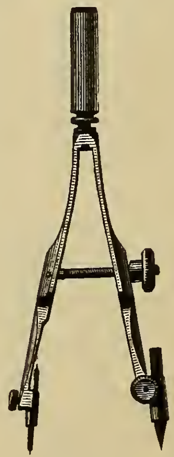
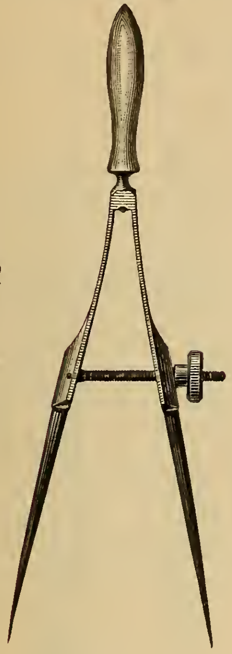

850

848.	Steel Spring Bow Dividers, with German Silver Handle, 3 inch,	each,	$1.75
849.	" " Bow Pen, with Needle Point, German Silver Handle, 3 "	"	2.50
850.	" " Bow Pencil, " " " " 3 "	"	2.50
851.	" " Bows, Set of 3, Nos. 848, 849 and 850, in Morocco Case, lined with Silk Velvet	set,	7.75

"LENOX" SWISS INSTRUMENTS.

Illustrations ⅔ size.



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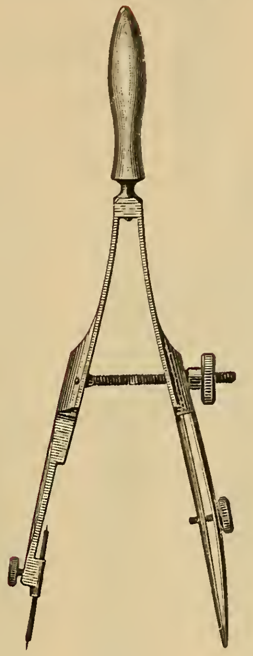

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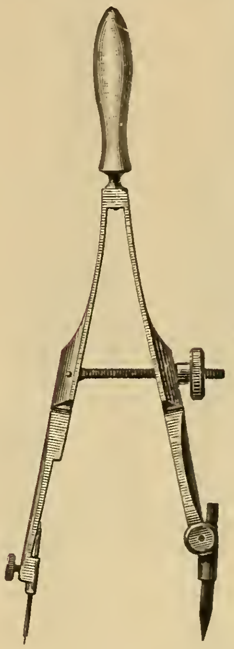
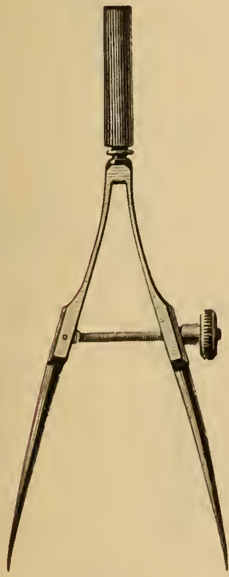


854

Each Instrument Stamped "M. P. P. Co."

852.	Steel Spring Bow Dividers, with Ivory Handle, 3½ inch	each,	$2.20
853.	" " Bow Pen, with Needle Point, Ivory Handle, 3½ "	"	3.00
854.	" " Bow Pencil, " " " 3½ "	"	3.00
855.	" " Bows, set of 3, Nos. 852, 853 and 854 in Morocco Case, lined with Silk Velvet	set,	9.20

Illustrations ⅔ size.



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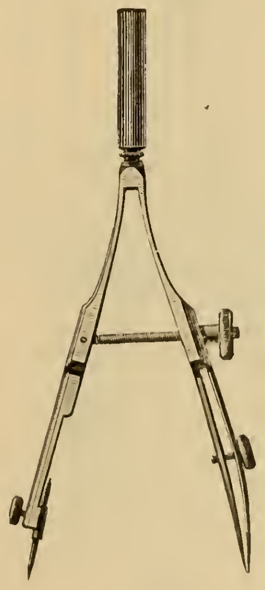

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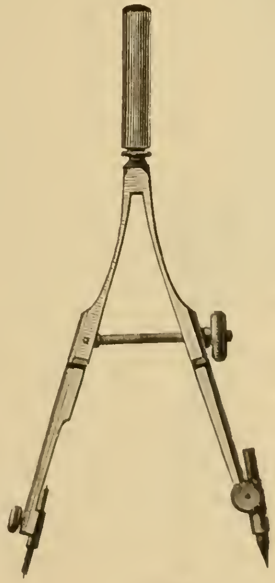
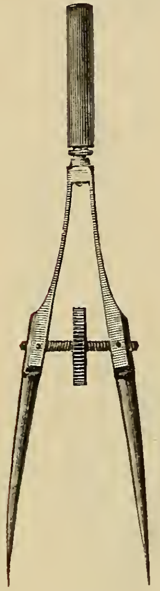


858

Each Instrument Stamped "M. P. P. Co."

856.	Steel Spring Bow Dividers, with German Silver Handle, 3½ inch	each,	$2.00
857.	" " Bow Pen, with Needle Point, " " " 3½ "	"	2.50
858.	" " Bow Pencil, " " " " 3½ "	"	2.50
859.	" " Bows, Set of 3, Nos. 856, 857 and 858 in Morocco case, lined with Silk Velvet	set,	8.00

"LENOX" SWISS INSTRUMENTS.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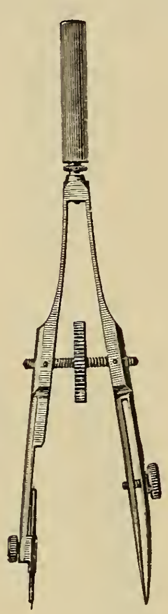
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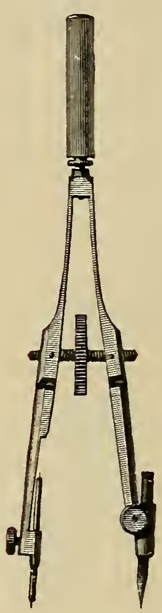

862

Each Instrument stamped "M. P. P. Co."

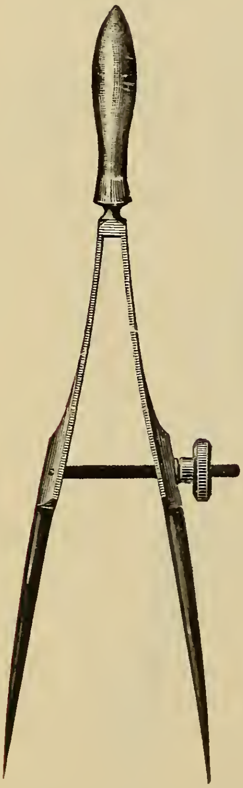
Illustrations ⅔ size.

860. Steel Spring Bow Dividers, with German Silver Handle, 3½ inch......................each $2.60.

861. Steel Spring Bow Pen, with Needle Point, German Silver Handle, 3½ inch, each $3.25.

862. Steel Spring Bow Pencil, with Needle Point, German Silver Handle, 3½ inch, each $3.25.

863. Steel Spring Bows, set of 3, Nos. 860, 861 and 862 in Morocco Cases, lined with Silk Velvet, set.............................. $10.35. These bows have a screw on a right and left thread.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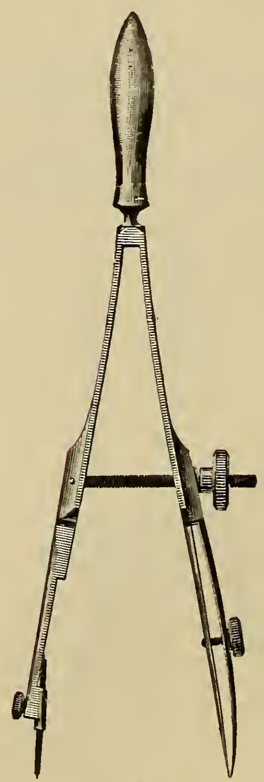
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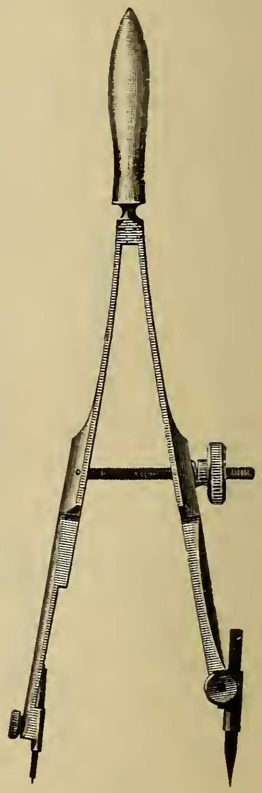
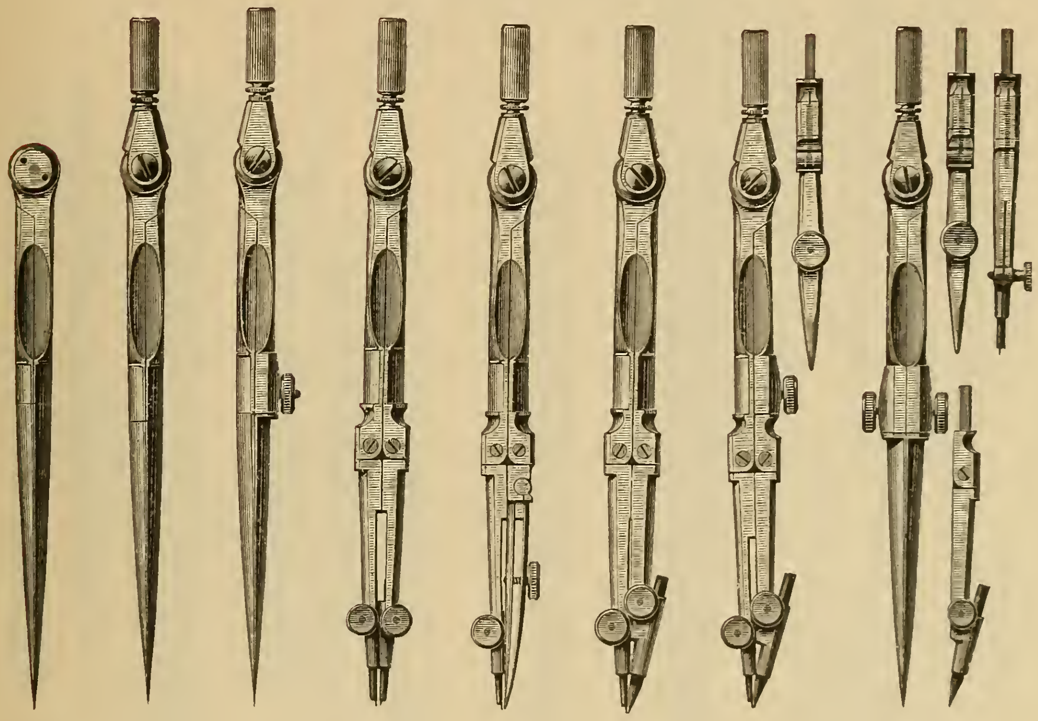

866

864.	Steel Spring Bow Dividers, with Ivory Handle, 4¾ inch......... each,	$2.40
865.	" " Bow Pen, with Needle Point, Ivory Handle, 4¾ inch..... "	3.25
866.	" " Bow Pencil, " " " " 4¾ " ..... "	3.25
867.	" " Bows, Set of 3, Nos. 864, 865 and 866 in Morocco Case, lined with Silk Velvet. "	10.15

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

Illustrations ⅔ size.



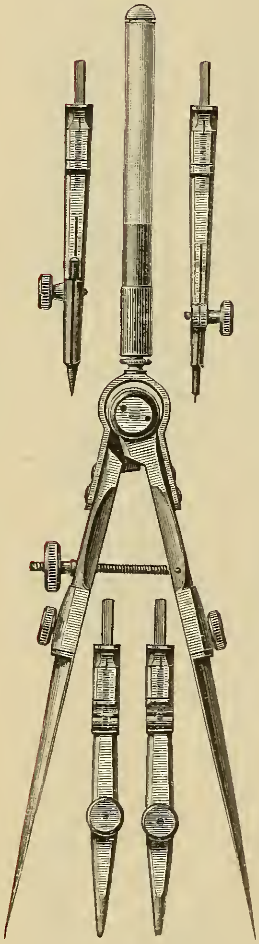
868.	Plain Dividers, 3½ inch	each	$1.75
869.	" " 3½ " with Handle	"	2.00
870.	Hairspring Dividers, 3½ inch, with Handle	"	2.60
871.	Compasses, 3½ inch, with two fixed Needle Points (Bow Dividers)	"	3.25
872.	" 3½ " with fixed Needle and Pen Point (Bow Pen)	"	3.35
873.	" 3½ " with fixed Needle and Pencil Point (Bow Pencil)	"	3.25
874.	" 3½ " with fixed Needle Point, Pen and Pencil Point	"	5.25
875.	" 3½ " with two Steel Points, Pen, Pencil and Needle Point	"	6.00

FOR "LENOX" INSTRUMENTS AS ABOVE, BUT WITH PIVOT JOINT, SEE PAGE 48.

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

Illustrations ⅔ size.



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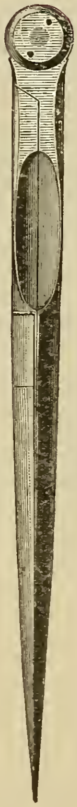

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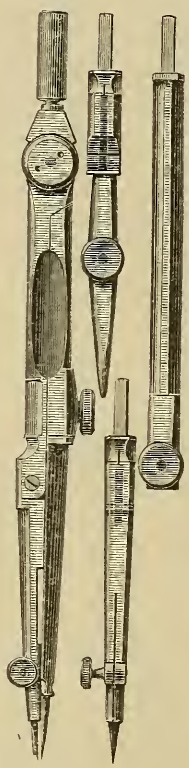

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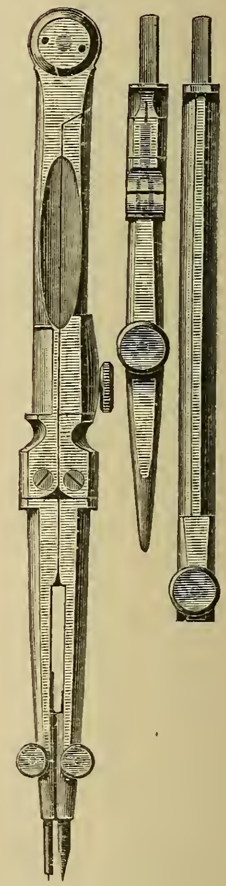


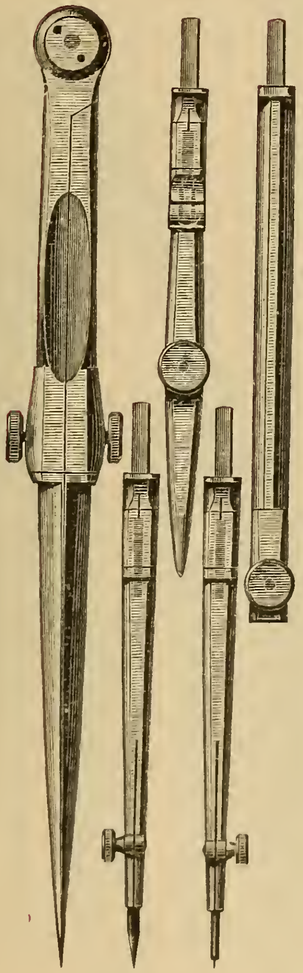
884

876.	Spring Bow Compasses, with long Ivory Handle, 2 Steel Points, 2 Pen Points, Pencil and Needle Point	each,	$8.25
	No. 876 may also be used as Railroad Pen.		
	Morocco Case for No. 876		1.50
877.	Plain Dividers, 4½ inch	"	2.00
878.	" " 5 "	"	2.20
879.	" " 6 "	"	2.50
880.	Hairspring Dividers, 4½ inch	"	2.70
881.	" " 5 "	"	3.00
882.	" " 6 "	"	3.30
883.	Compasses, 4½ inch, with fixed Needle Point, Steel, Pen, Pencil Point and Lengthening Bar	"	7.25
884.	Compasses, 5½ inch, with fixed Needle Point, Pen, Pencil Point and Lengthening Bar	"	7.00

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

Illustrations ⅔ size.



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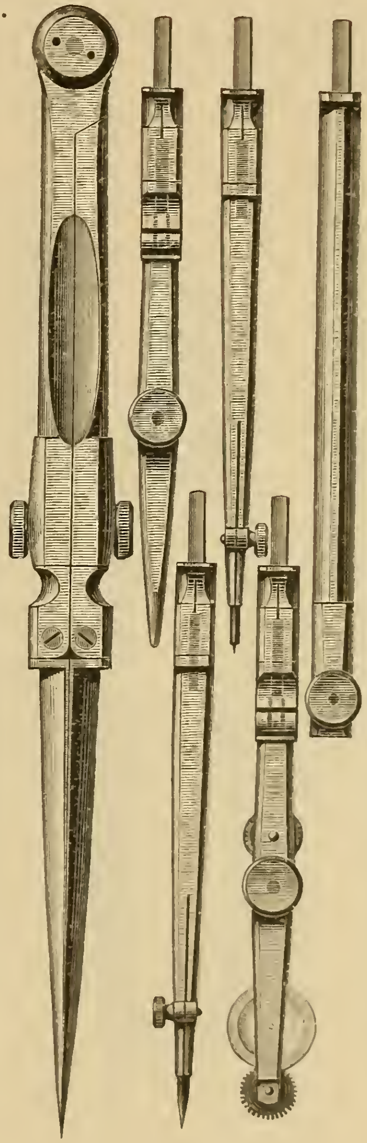


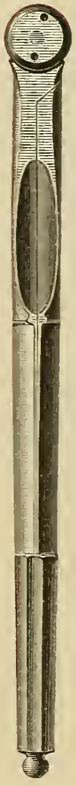
889

885.	Compasses, 5½ inch, with 2 Steel Points, Pen, Pencil, Needle Point and Lengthening Bar..........................	each, $6.75
886.	Compasses, 6 inch, with 2 Steel Points, Pen, Pencil, Needle Point and Lengthening Bar..........................	" 8.00
887.	Compasses, 6½ inch, with 2 Steel Points, with joint in each leg, Pen, Pencil, Needle Point and Lengthening Bar..................	" 9.25
888.	Compasses, 7 inch, with 2 Steel Points, with joint in each leg, Pen, Pencil, Needle Point and Lengthening Bar and Dotting Pen	" 10.75
889.	Compasses, 7 inch, with 2 Steel Points, with joint in each leg, Pen, Pencil, Needle Point and Lengthening Bar and Dotting Pen with 6 Wheels.......	" 12.00

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

Illustrations ⅔ size.



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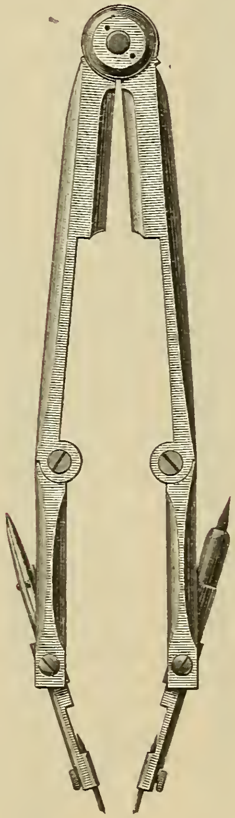

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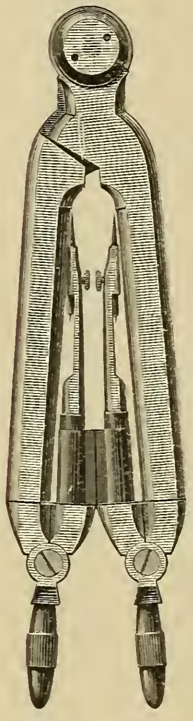
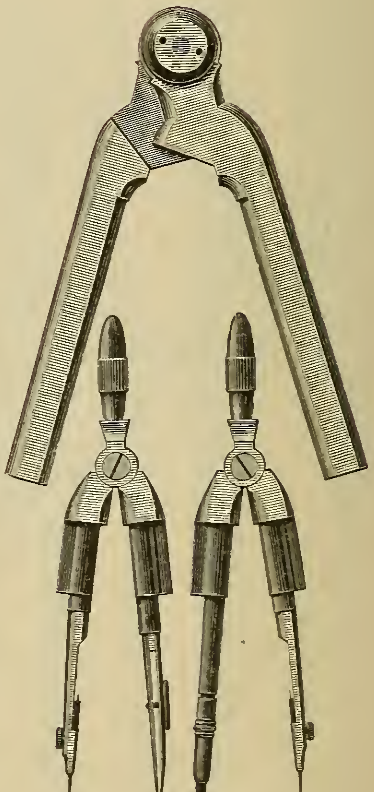


Folded.

892



Drawn out for small circles.

892

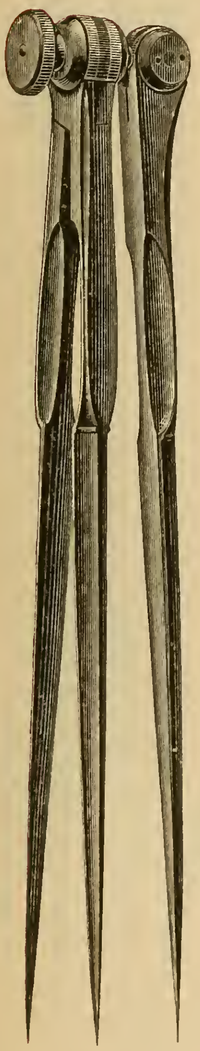
890.	Pocket Dividers, with Sheath, 5 inch	each,	$3.00
891.	Pocket Compasses, with Folding Points	"	8.75
892.	Pillar Compasses, with Handles, 2 Needle Points, Pen and Pencil Point, which can be withdrawn from the compasses and used as small Bow-Pen and Pencil respectively	"	9.50

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

Illustrations ⅔ size.

½ size.



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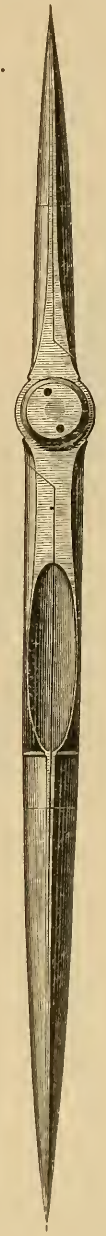

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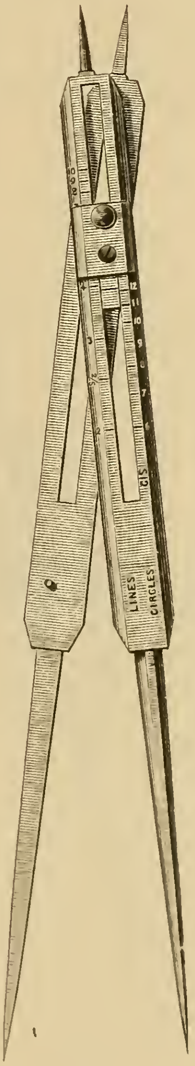

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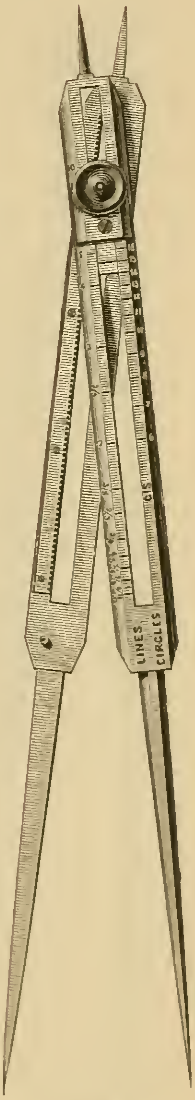


896

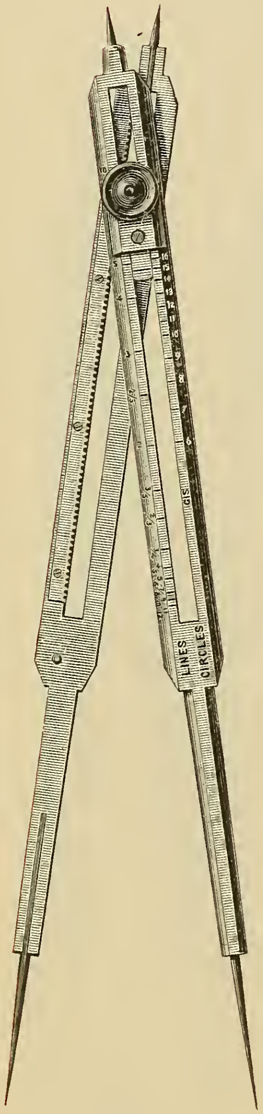
893.	Three-legged Dividers for taking off three points, 6 inch	each,	$5.00
894.	Whole and Half Dividers, 7¼ inch	"	4.00
895.	Proportional Dividers, finely divided for lines and circles, 7½ inch	"	10.00
896.	Proportional Dividers, finely divided for lines and circles, 8½ inch, with rack movement	"	12.50

Morocco Cases, Silk Velvet lined for					
	Numbers...	893	894	895	896
	Each	$0.80	0.80	.080	0.90

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

Illustrations ½ size.



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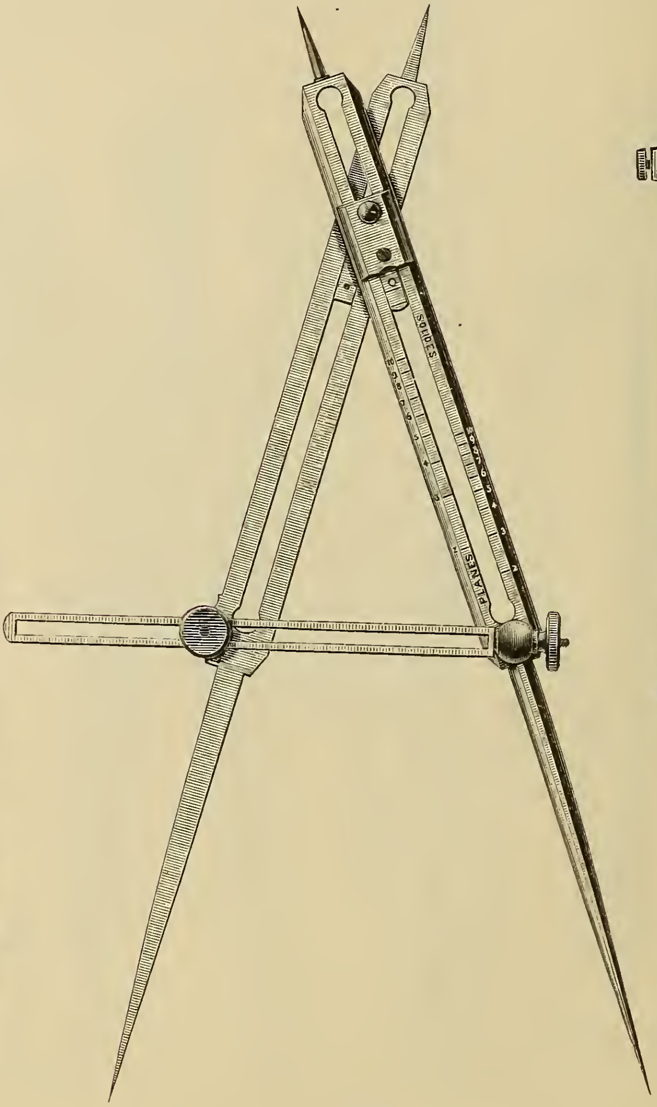
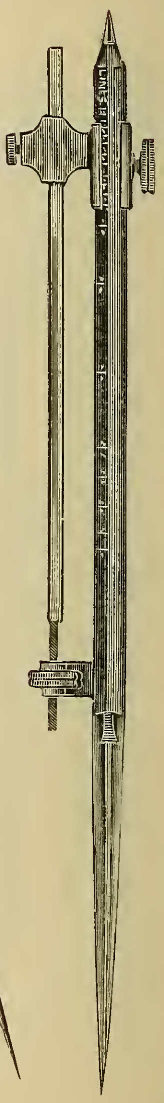


899



900

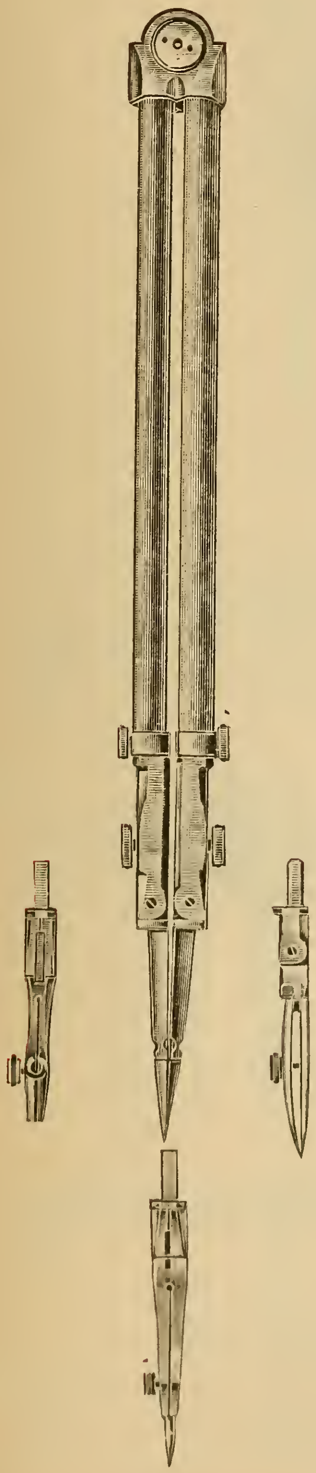
897.	Proportional Dividers, finely divided for lines and circles, 9 inch, with rack movement and movable points..............	each,	$16.00
898.	Proportional Dividers, finely divided for lines and circles, 9 inch, with micrometer adjustment.................................	"	16.00
899.	Proportional Dividers, finely divided for lines, circles, planes and solids, 9 inch, with micrometer adjustment.....	"	16.00
900.	Proportional Dividers, finely divided for lines and circles, with micrometer adjustment, 9½ inches.........................	"	16.50

"LENOX" SWISS INSTRUMENTS.

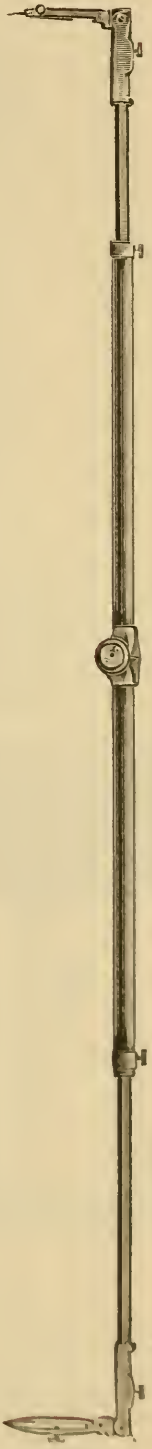
Each Instrument Stamped "M. P. P. Co."

901. Tubular Compass. This compass is intended for laying out "full-sized" details or for use in the pattern shop. It is 10½ inches long and may be extended to 15 inches, or used as a Beam Compass with a capacity up to 26-inch radius. This instrument is made of best German Silver and English Steel, and is provided with two Steel Points, Reversible Needle Points, Pen and Pencil parts.

Each, $17.00.



901

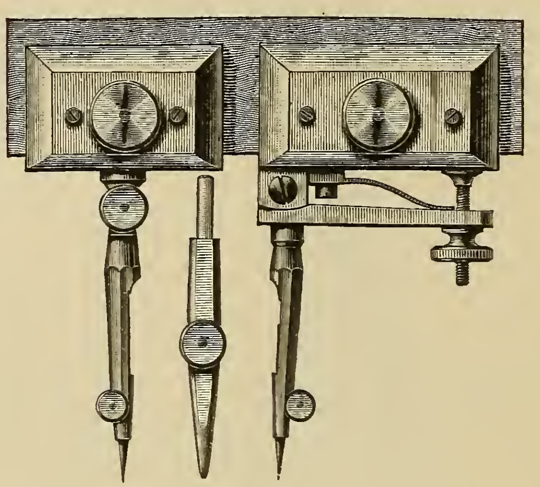


901
Drawn out.

"LENOX" SWISS INSTRUMENTS.

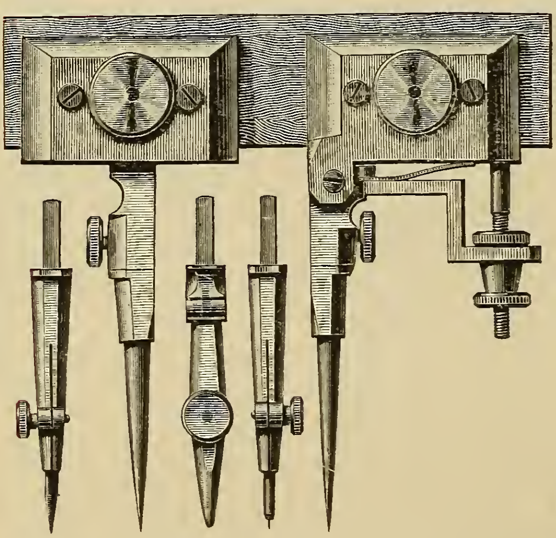
Each Instrument Stamped "M. P. P. Co."

Illustrations ⅔ size.

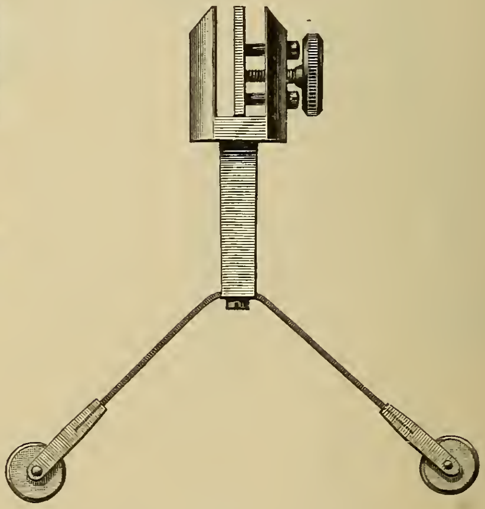


902

902.	Beam Compasses, to fit on any straight edge, with 2 Needle Points, exchangeable for lead, and Pen Point, with Micrometer adjustment	each,	$8.40
903.	Wheel Attachment for No. 902	"	2.25
	Morocco Case, lined with Silk Velvet for No. 902	"	1.00



904



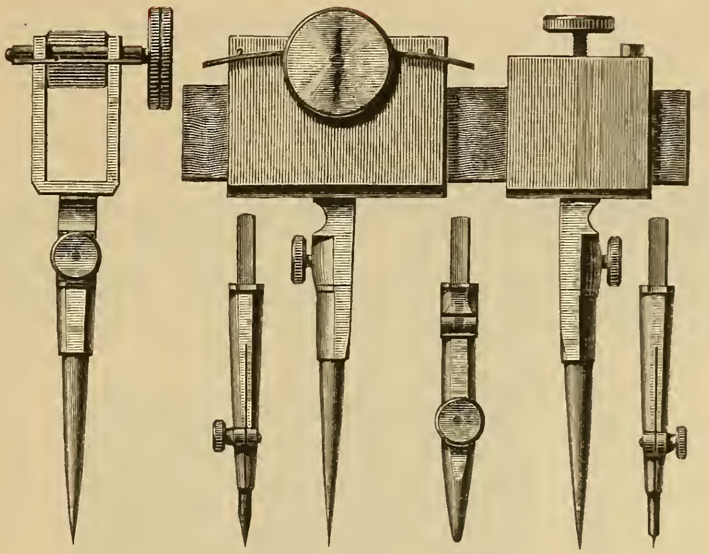
905

904.	Beam Compasses, to fit on any straight edge, with 2 Steel Points, Pen, Pencil and Needle Point, with Micrometer adjustment	each,	$9.00
905.	Wheel Attachment for No. 904	"	2.25
	Morocco Case, Silk Velvet lined, for No. 904	"	1.25
	" " " " for Nos. 904 and 905	"	1 75

SEE PAGE 174 FOB BEAM COMPASS BARS.

"LENOX" SWISS INSTRUMENTS.

Illustration ⅔ size.

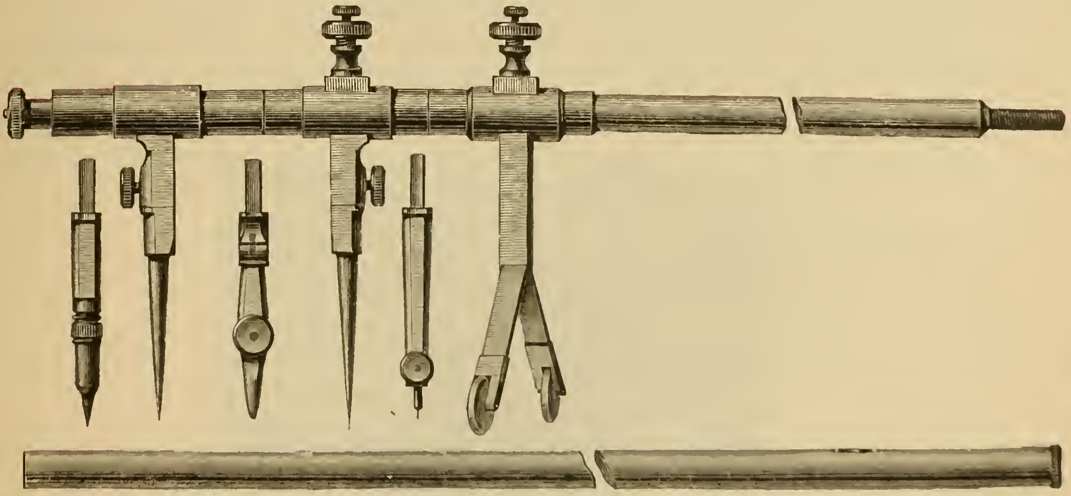


Each Instrument Stamped "M. P. P. Co."

906

906.	Beam Compasses, with two Steel Points, Pen, Pencil and Needle Point	each,	$9.75
907.	Wheel Attachment for No. 906	"	2.75
	Morocco Case for No. 906	"	1.25
	" " for Nos. 906 and 907	"	1.75

Illustration ⅔ size.



908 911

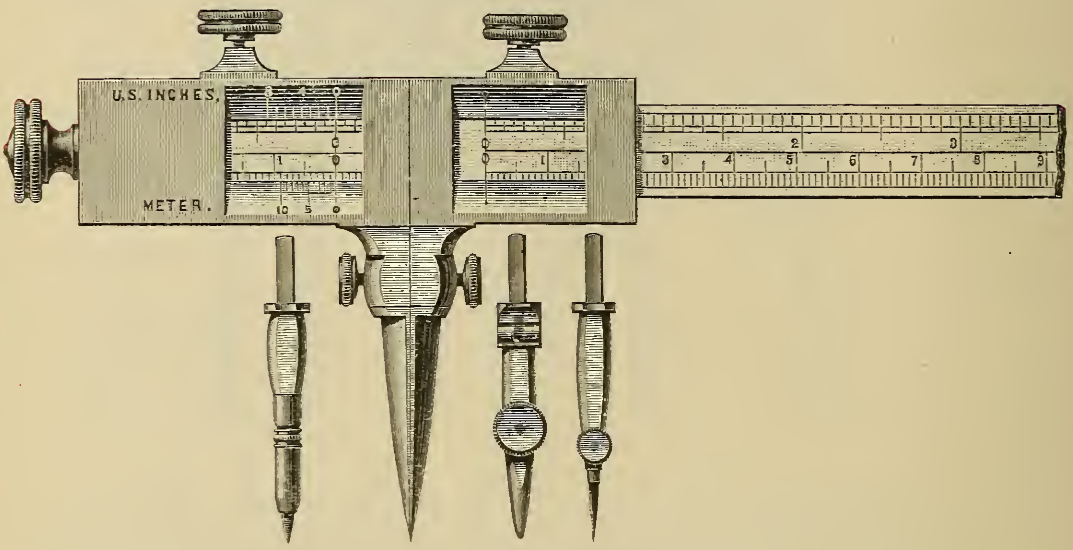
908.	Tubular Beam Compasses, 18 inch, 2 Bars, with 2 Steel Points, Pen, Pencil and Needle Point	each,	$10.50
909.	Tubular Beam Compasses, 24 inch, 3 Bars	"	11.75
910.	" " " 36 " 3 "	"	15.25
	Morocco Case for No. 908, $1.50. No. 909, $1.75. No. 910, $2.25.		
911.	Wheel Attachment for No. 908 or 909	each,	2.50
912.	" " " No. 910	"	2.75

SEE PAGE 174 FOR BEAM COMPASS BARS.

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

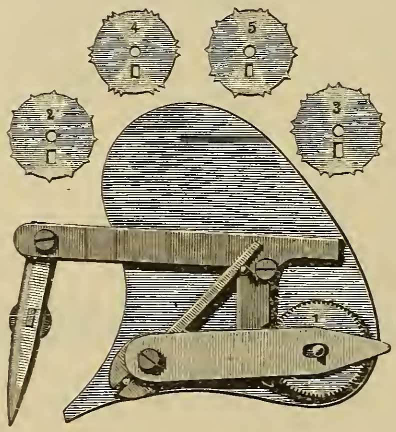
Illustration ⅔ size.



913

913. Beam Compasses, with Rectangular Metal Bar, 100 centimeters long, finely divided in meter, millimeter vernier reading to $\frac{1}{10}$ millimeter and U. S. inches, ½ lines, vernier reading to $\frac{1}{16}$ line. In elegant Morocco Case......................each, $35.00

Illustration ⅔ size.



914

914.	Dotting Instruments with 6 wheels in Morocco Case............	each,	$3.75
915.	Extra wheels for making any desired line............................	"	.25

This unique instrument is the best in the way of a dotting instrument. The wheels of various patterns are inserted by throwing back the spring.

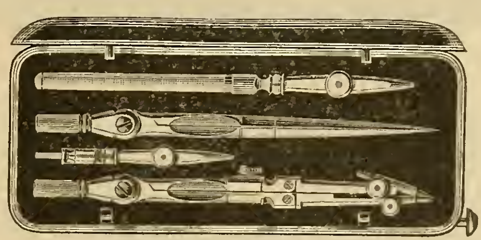
"LENOX"

GENUINE SUPERIOR SWISS DRAWING INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

IN MOROCCO POCKET CASES, WITH BAR LOCK, AND LINED WITH SILK VELVET.

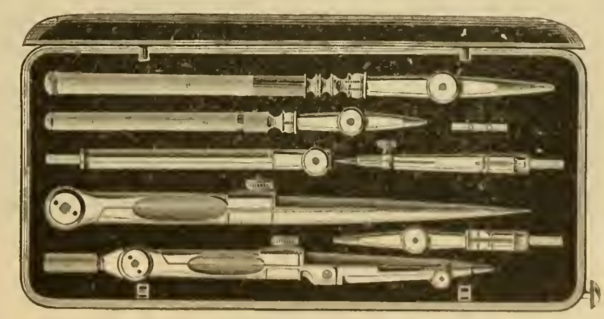
The following assortment of "LENOX" Swiss Instruments, which we have fitted to cases, were selected from our large stock with infinite care to meet various requirements. We will fit to cases, however, instruments of different assortment should the purchaser desire.



916

No. 916 contg.: No. 806. Drawing Pen, with joint, Ivory Handle, 4 inch;
869. Plain Divider, 3½ inch, with Handle;
874. Compass, 3½ inch, with fixed Needle Point, Pen and Pencil Point;

Each $10.00



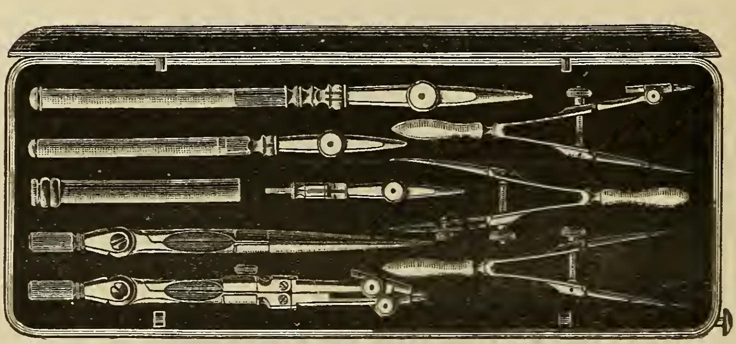
917

No. 917 contg.: No. 806. Drawing Pen, with joint, Ivory Handle, 4 inch;
808. " " " " and pin, Ivory Handle, 5½ in.;
881. Hair Spring Divider, 5 inch;
883. Compass, 4½ inch, with fixed Needle Point, Steel, Pen, Pencil Point and Lengthening Bar, Compass Key;

Each $15.00

"LENOX" SWISS INSTRUMENTS.

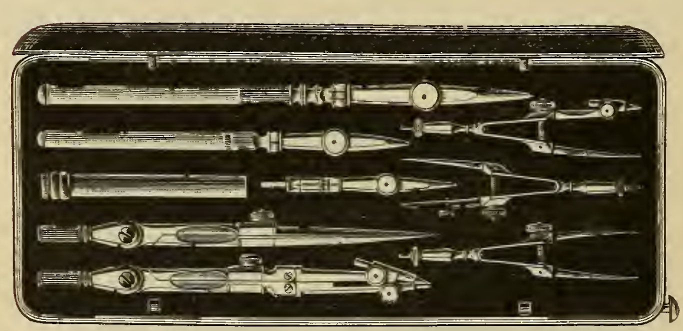
Each Instrument Stamped "M. P. P. Co."



918

No. 918 contg. : No. 806. Drawing Pen, with joint, Ivory Handle, 4 inch ;
808. " with joint and pin, Ivory Handle, 5½ inch ;
841. Steel Spring Bow Divider, with Ivory Handle, 3 inch ;
842. " Bow Pen, " " " 3 "
843. " Bow Pencil, " " " 3 "
869. Plain Divider, 3½ inch, with Handle ;
874. Compass, 3½ inch, with fixed Needle Point, Pen and Pencil Point ; Box for Leads ;

Each..$19.35



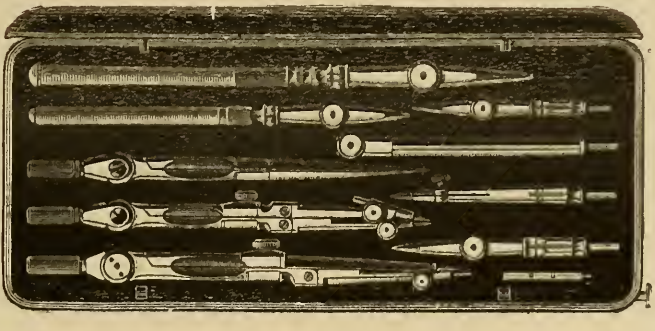
919

No. 919 contg. : No. 806. Drawing Pen, with joint, Ivory Handle, 4 inch ;
808. " with joint and pin, Ivory Handle, 5½ inch ;
834. Minute Steel Spring Bow Divider, Metal Handle, 2½ inch ;
835. " " Bow Pen, " 2½ "
836. " " Bow Pencil, " 2½ "
870. Hair Spring Divider, 3½ inch, with Handle ;
874. Compass, 3½ inch, with fixed Needle Point, Pen and Pencil Point ; Box for Leads ;

Each..$20.00

"LENOX" SWISS INSTRUMENTS.

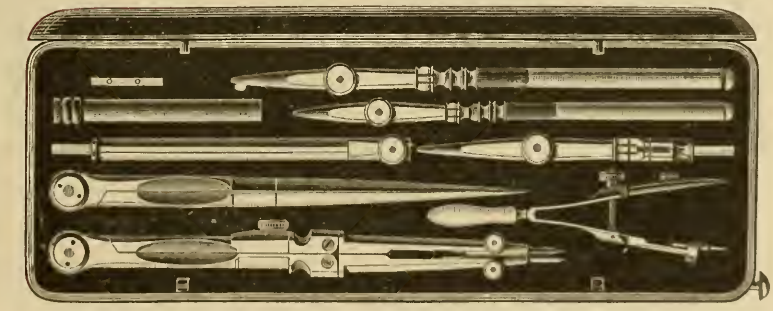
Each Instrument Stamped "M. P. P. Co."



920

No. 920 contg.: No. 806. Drawing Pen, with joint, Ivory Handle, 4 inch;
808. " with joint and pin, Ivory Handle. 5½ inch;
869. Plain Divider, 3½ inch, with Handle:
874. Compass, 3½ inch, with fixed Needle Point, Pen and Pencil Point;
883. Compass, 4½ inch, with fixed Needle Point, Steel, Pen, Pencil Point and Lengthening Bar;
Compass Key, with Screw Driver;

Each..$20.00



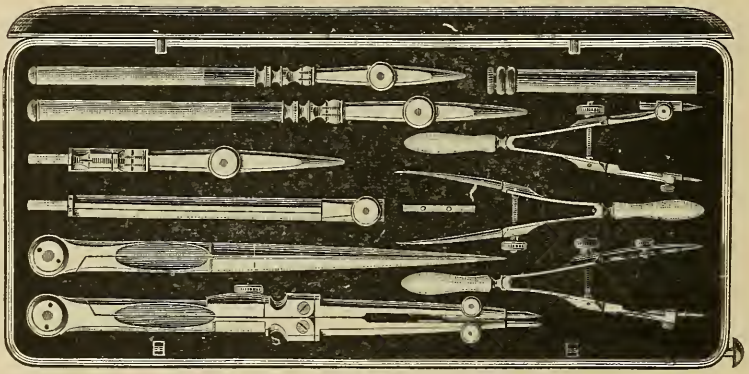
921

No. 921 contg.: No. 807. Drawing Pen, with joint and Pin, Ivory Handle, 4¾ inch;
808. " " " " 5½ ..
844. Steel Spring Bow Pen, with Ivory Handle, 3 inch;
878. Plain Divider, 5 inch;
884. Compass, 5½ inch, with fixed Needle Point, Pen, Pencil Point and Lengthening Bar;
Box for Leads;
Compass Key;

Each........ ....$17.50

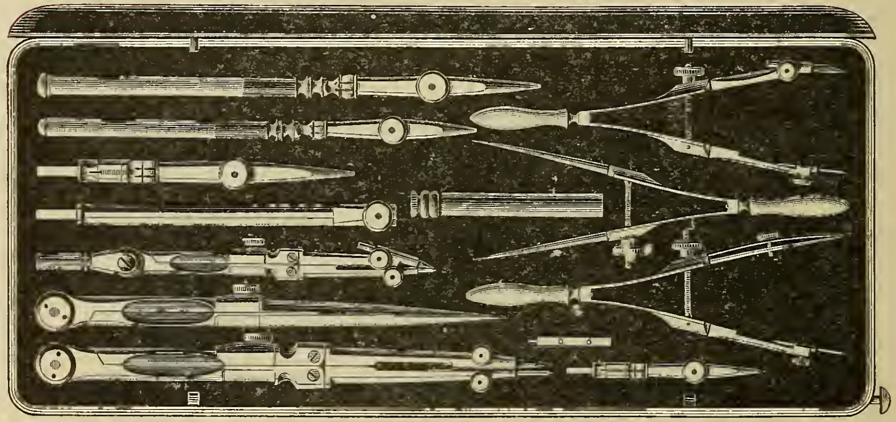
"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."



922

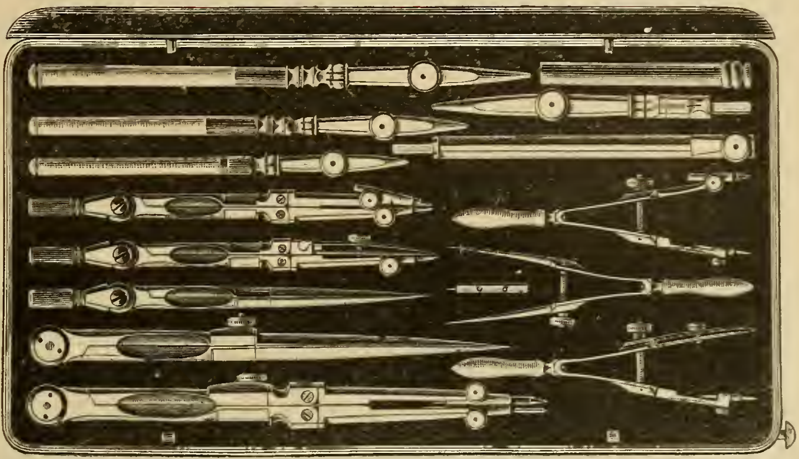
No. 922 contg.: No. 807. Drawing Pen, with joint and pin, Ivory Handle, 4¾ inch ;
808. " " " " 5½ "
841. Steel Spring Bow Divider, with Ivory Handle, 3 inch ;
844. " Bow Pen, " " 3 "
845. " Bow Pencil, " " 3 "
878. Plain Divider, 5 inch ;
884. Compass, 5½ inch, with fixed Needle Point, Pen, Pencil Point and Lengthening Bar ;
Box for Leads ; Compass Key ;
Each $22.35



923

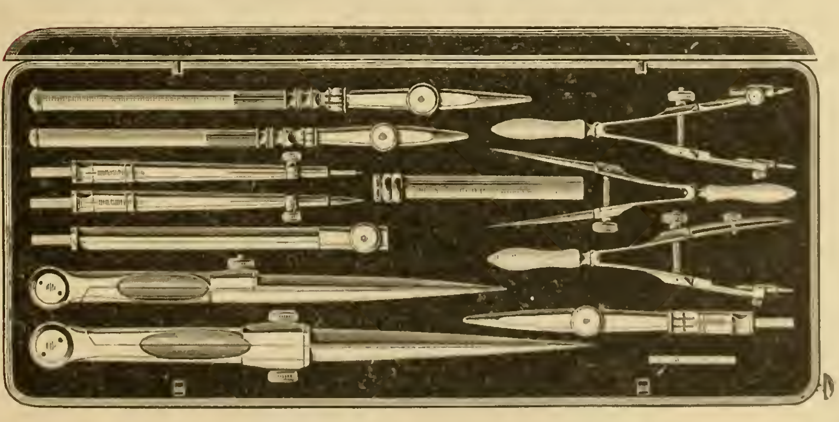
No. 923 contg. No. 807. Drawing Pen, with joint and pin, Ivory Handle, 4¾ inch ;
808. " " " " 5½ "
852. Steel Spring Bow Divider, Ivory Handle, 3½ inch ;
853. " Bow Pen, " 3½ "
854. " Bow Pencil, " 3½ "
874. Compass, 3½ inch, with fixed Needle Point, Pen and Pencil Point ;
881. Hair Spring Divider, 5 inch ;
884. Compass, 5½ inch, with fixed Needle Point, Pen, Pencil Point and Lengthening Bar ;
Box for Leads ; Compass Key with Screw Driver ;
Each $28.65

"LENOX" SWISS INSTRUMENTS.


Each Instrument Stamped "M. P. P. Co."

No. 924.

No. 924 contg.: No. 806. Drawing Pen, with joint, Ivory Handle, 4 inch ;
807. " " and pin, Ivory Handle, 4¾ inch ;
808. " " " " 5½ "
841. Steel Spring Bow Divider, Ivory Handle, 3 "
844. " Bow Pen, " 3 "
845. " Bow Pencil, " 3 "
869. Plain Divider, 3½ inch, with Handle ;
872. Compass, 3½ inch, with fixed Needle and Pen Point ;
873. " 3½ " " " Pencil Point ;
881. Hair Spring Divider, 5 inch ;
884. Compass, 5½ Inch, with fixed Needle Point, Pen, Pencil Point and Lengthening Bar;
Box for Leads ; Compass Key with Screw Driver ;
Each.. $34.80

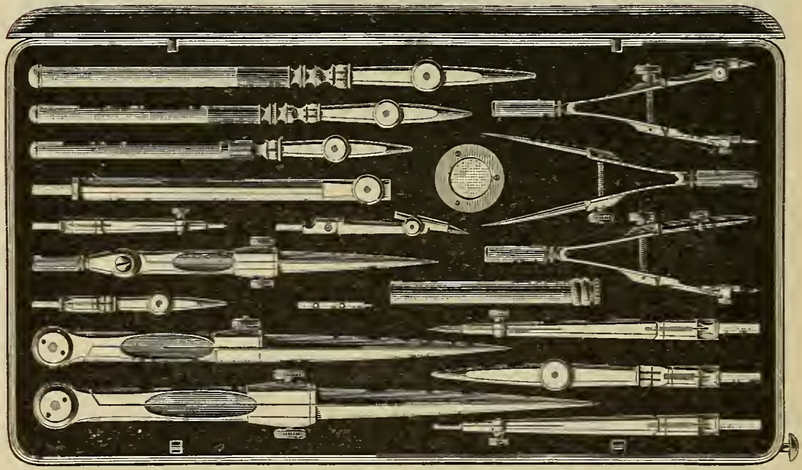

Each Instrument Stamped "M. P. P. Co."

No. 925.

No. 925 contg.: No. 807. Drawing Pen, with joint and pin, Ivory Handle, 4¾ inch ;
808. " " " " 5½ "
841. Steel Spring Bow Divider, with Ivory Handle, 3 "
844. " Bow Pen, " 3 "
845. " Bow Pencil, " 3 "
881. Hair Spring Divider, 5 inch ;
886. Compass, 6 in., with 2 Steel Points, Pen, Pencil, Needle Point and Lengthening Bar ;
Box for Leads ; Compass Key ;
Each $24.65

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co.



926

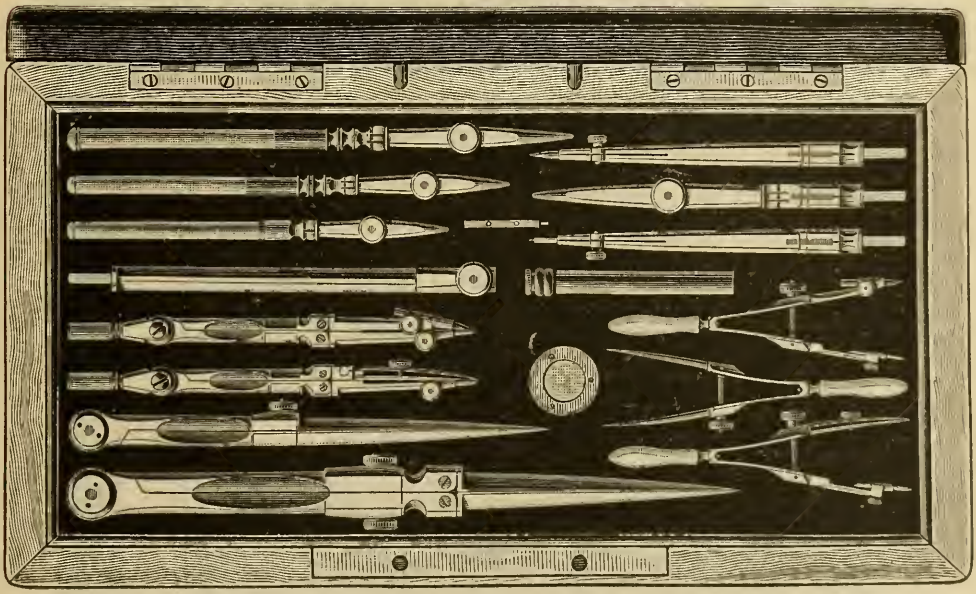
No. 926 contg.: No. 806. Drawing Pen, with joint, Ivory Handle, 4 inch ;
807. " " " " and pin, Ivory Handle, 4¾ inch ;
808. " " " " " " 5½ "
848. Steel Spring Bow Divider, with Metal Handle, 3 inch;
849. " " Bow Pen, " " " 3 "
850. " " Bow Pencil, " " " 3 "
875. Compass, 3½ inch, with 2 Steel Points, Pen, Pencil and Needle Point;
881. Hair Spring Divider, 5 inch ;
886. Compass, 6 inch, with 2 Steel Points, Pen, Pencil, Needle Point and Lengthening Bar ;
Box for Leads ;
Horn Centre, with German Silver Edge ;
Compass Key, with screw driver ;

Each...$32.80

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

IN FINE POLISHED ROSEWOOD CASE, WITH EBONY CORNERS, LOCK and TRAY.

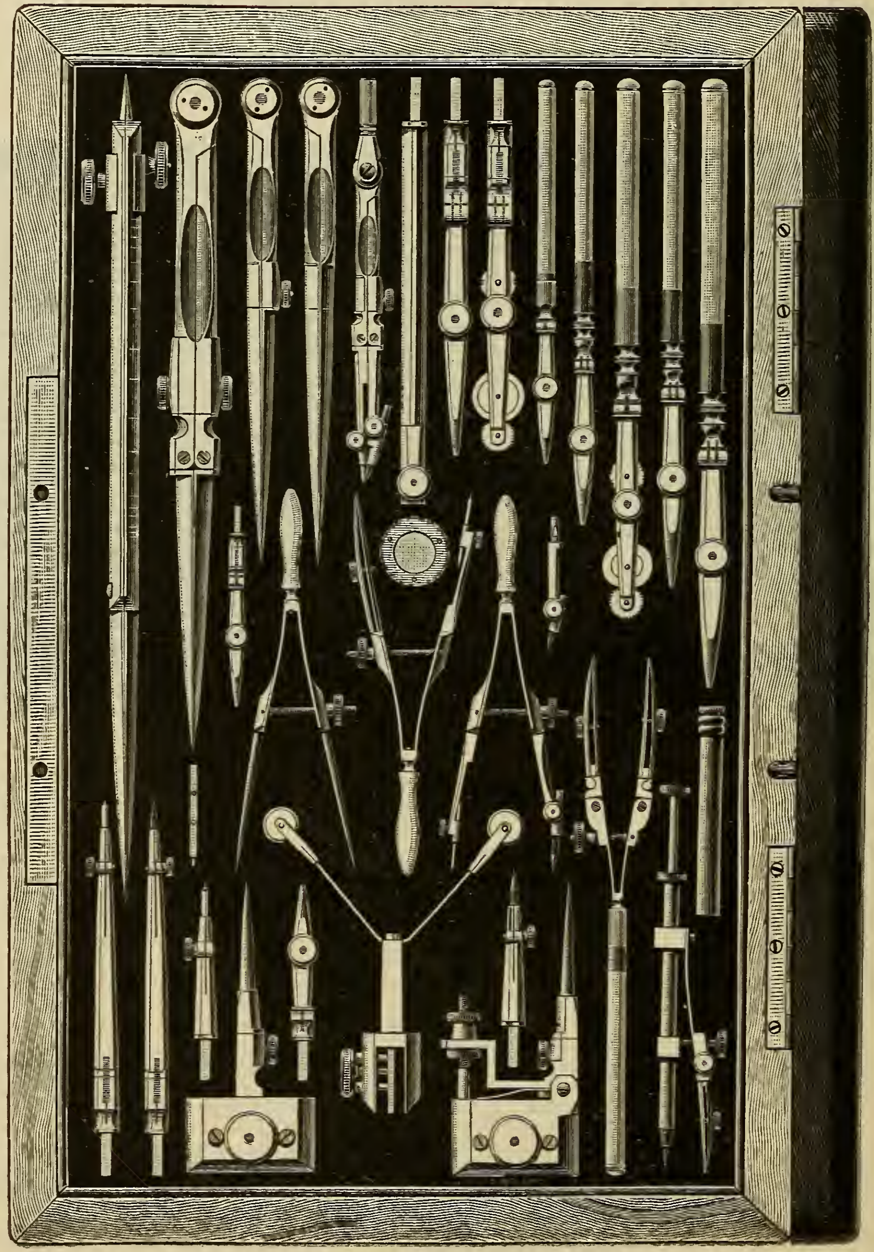


927

No. 927 contg.: No. 806. Drawing Pen, with joint, Ivory Handle, 4 inch ;
807. “ “ “ “ and pin, Ivory Handle, 4¾ inch ;
808. “ “ “ “ “ “ “ 5½ “
841. Steel Spring Bow Divider, with Ivory Handle, 3 “
844. “ “ Bow Pen, “ “ “ 3 “
845. “ “ Bow Pencil, “ “ “ 3 “
872. Compass, 3½ inch, with fixed Needle and Pen Point;
873. “ 3½ “ “ “ “ “ Pencil “
881. Hair Spring Divider, 5 inch ;
887. Compass, 6½ inch, with 2 Steel Points, with joint in each leg, Pen, Pencil, Needle Point and Lengthening Bar.
Box for Leads ;
Horn Centre, with German Silver Edge ;
Compass Key, with screw driver ;

Each..$39.00

"LENOX" SWISS INSTRUMENTS.



928

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

FINE POLISHED ROSEWOOD CASE, WITH EBONY CORNERS, LOCK AND TRAY.

No. 928 contg.: No. 806. Drawing Pen, with joint, Ivory Handle, 4 inch ;
807. " " and pin, Ivory Handle, 4¾ inch ;
808. " " " " 5½ "
809. " " " " 6½ "
819. Railroad Pen, with joints to blades and in shanks, Ivory Handle, 5½ inch ;
821. Dotting Pen, with 6 Wheels, Ivory Handle, 6 inch ;
833. Spring Bow Pen, with Pencil Point, self-adjusting ;
852. Steel Spring Bow Divider, with Ivory Handle, 3½ inch ;
853. " Bow Pen, " 3½ "
854. " Bow Pencil, " 3½ "
874. Compass, 3½ inch, with fixed Needle Point, Pen and Pencil Point ;
878. Plain Divider, 5 inch ;
881. Hair Spring Divider, 5 inch ;
889. Compass, 7 inch, with 2 Steel Points, with joint in each leg, Pen, Pencil, Needle Point, Lengthening Bar and Dotting Pen with 6 Wheels ;
896. Proportional Divider, 8½ inch, divided for lines and circles, with rack movement ;
904. Beam Compass, with 2 Steel Points, Pen, Pencil and Needle Point, with Micrometer adjustment ;
905. Wheel Attachment for No. 904 ;
Box for Leads ;
Horn Center with German Silver Edge ;
Compass Key with Screw Driver ;

Each $90.00

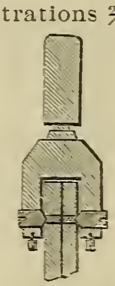
"LENOX"

GENUINE SUPERIOR SWISS DRAWING INSTRUMENTS.

With Perfect Pivot Jointed Heads. Of Best German Silver and English Steel.

Each Instrument Stamped "M. P. P. Co."

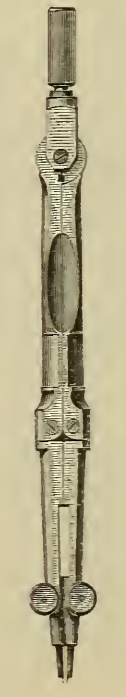
Illustrations ⅔ size.



Sectional view of Pivot Jointed Head.

950

951

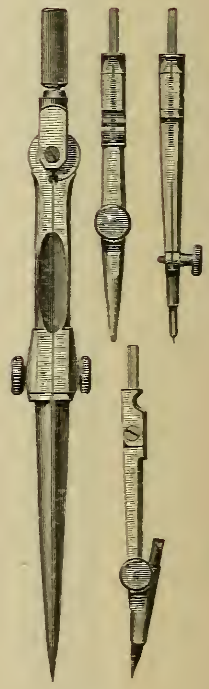


952

953

954

955



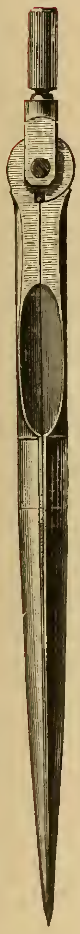
956

		Each.
950.	Plain Dividers, 3½ inch..	$2.25
951.	Hair Spring Dividers, 3½ inch..	3.00
952.	Compasses, 3½ inch, with 2 fixed Needle Points (Bow Dividers)......	3.75
953.	" 3½ " " fixed Needle and Pen Point (Bow Pen)	4.00
954.	" 3½ " " " " and Pencil Point (Bow Pencil)..	4.00
955.	" 3½ " " " " Point, Pen and Pencil Point	6.00
956.	" 3½ " " 2 Steel Points, Pen, Pencil and Needle Point...	7.00

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

Illustrations ⅔ size.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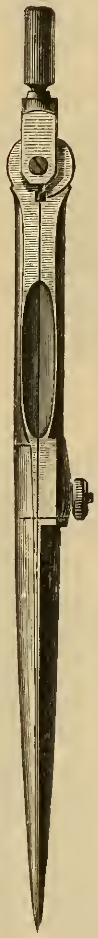
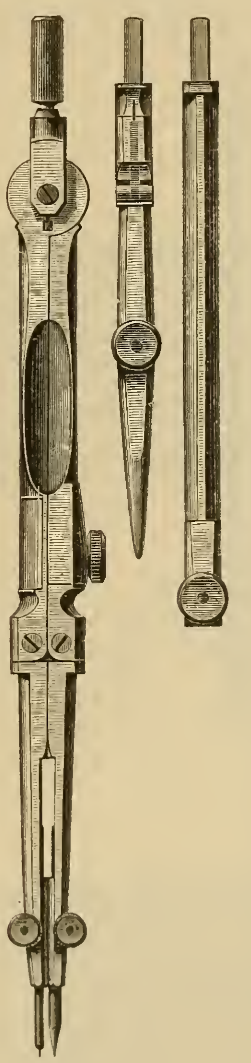
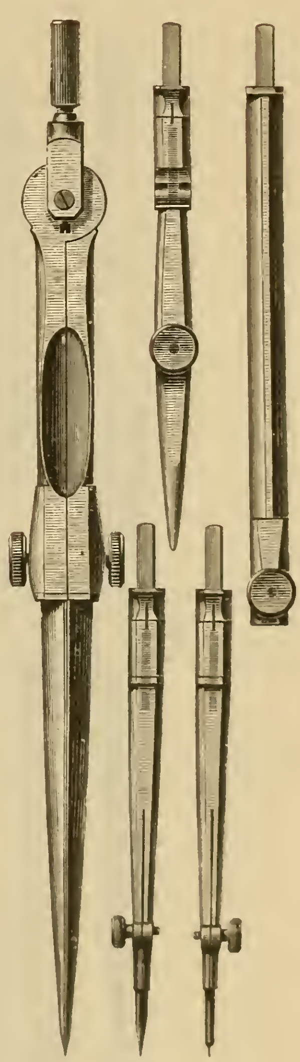

961


963

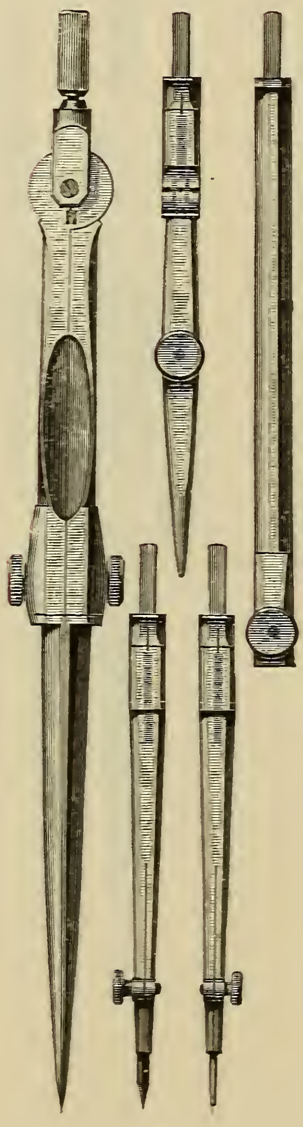

964

		Each.
957.	Plain Dividers, 4½ inch	$2.50
958.	" 5 "	2.75
959.	" 6 "	3.25
960.	Hair Spring Dividers, 4½ inch	3.25
961.	" " 5 "	3.50
962.	" " 6 "	4.00
963.	Compasses, 5½ inch, with fixed Needle Point, Pen, Pencil Point and Lengthening Bar	6.75
964.	Compasses, 5½ inch, with 2 Steel Points, Pen, Pencil, Needle Point and Lengthening Bar	7.25

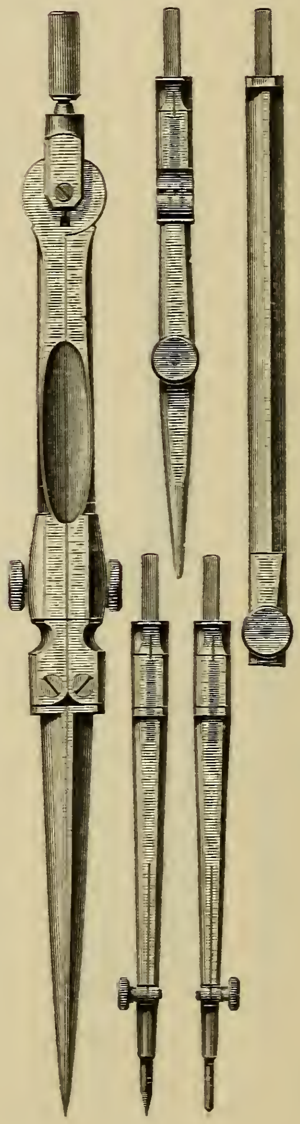
"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

Illustrations ⅔ size.



965



966

		Each.
965.	Compasses, 6 inch, with 2 Steel Points, Pen, Pencil, Needle Point and Lengthening Bar	$ 8.50
966.	Compasses, 6 inch, with 2 Steel Points with joint in each leg, Pen, Pencil, Needle Point and Lengthening Bar	9.50

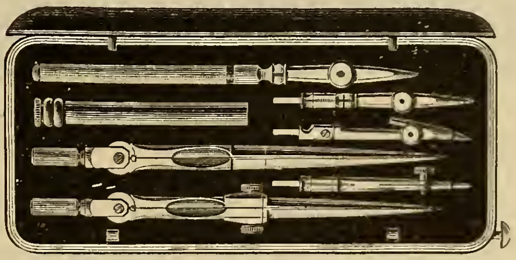
"LENOX"

GENUINE SUPERIOR SWISS DRAWING INSTRUMENTS

WITH PERFECT PIVOT JOINTED HEADS.

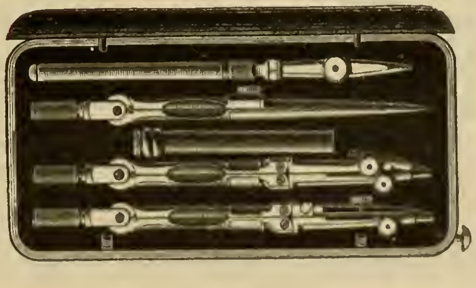
In Morocco Pocket Cases, with Bar Lock, Lined with Finest Silk Velvet.

Each Instrument Stamped "M. P. P. Co."



967

No. 967 contg.: No. 806. Drawing Pen, with joint, Ivory Handle, 4 inch ;
950. Plain Divider, 3½ inch ;
956. Compass, 3½ inch, with 2 Steel Points, Pen, Pencil and Needle Point ;
Pivot Joints. Box for Leads;
Each $11.00

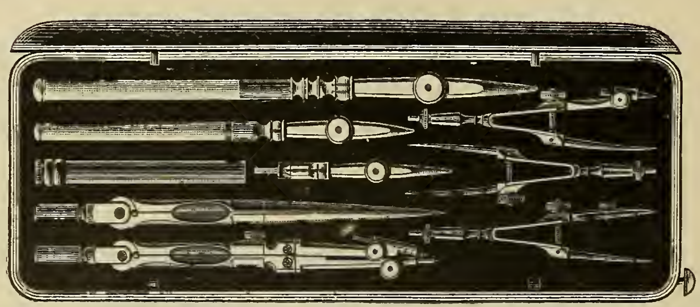


968

No. 968 contg.: No. 806. Drawing Pen, with joint, Ivory Handle, 4 inch ;
951. Hair Spring Divider, 3½ inch ;
953. Compass, 3½ inch, with fixed Needle and Pen Point ;
Pivot Joints. 954. " 3½ " " " " " Pencil "
Box for Leads ;
Each.. .... $13.40

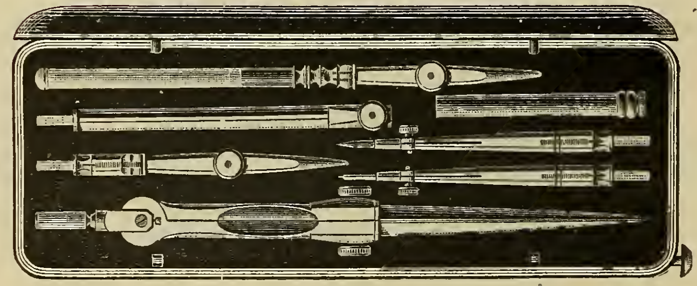
“LENOX” SWISS INSTRUMENTS.

Each Instrument Stamped “M. P. P. Co.”



969

No. 969 contg.: No. 806. Drawing Pen, with joint, Ivory Handle, 4 inch ;
808. “ “ “ “ and Pin, Ivory Handle, 5½ inch ;
834. Minute Steel Spring Bow Divider, Metal Handle, 2½ “
835. “ “ “ Bow Pen, “ “ 2½ “
836. “ “ “ Bow Pencil, “ “ 2½ “
Pivot Joints. 950. Plain Divider, 3½ inch ;
955. Compass, 3½ inch, with fixed Needle Point, Pen and Pencil Point ;
Box for Leads ;
Each..$21.20

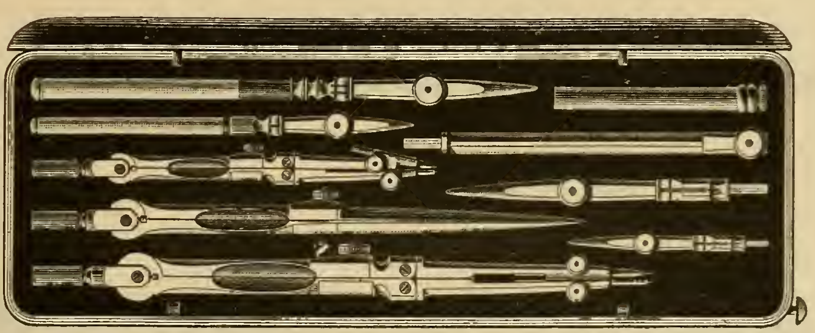


970

No. 970 contg.: No. 808. Drawing Pen, with joint and pin, Ivory Handle, 5½ inch ;
964. Compass, 5½ inch, with 2 Steel Points, Pen, Pencil, Needle Point and Lengthening Bar ;
Pivot Joints.
Box for Leads ;
Each..$12.00

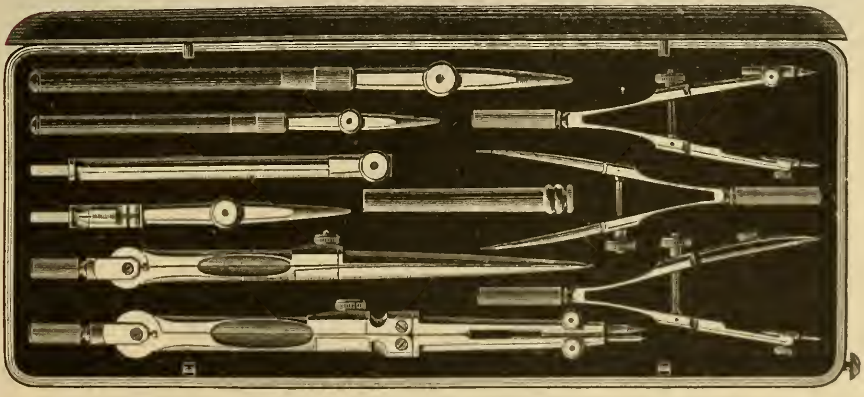
"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."



971

No. 971 contg.: No. 806. Drawing Pen, with joint, Ivory Handle, 4 inch ;
808. " " " " and pin, Ivory Handle, 5½ inch ;
955. Compass, 3½ inch, with fixed Needle Point, Pen and Pencil Point ;
Pivot Joints.
961. Hair Spring Divider, 5 inch ;
963. Compass, 5½ inch, with fixed Needle Point, Pen, Pencil Point and Lengthening Bar ;
Box for Leads ;
Each.. $21.50



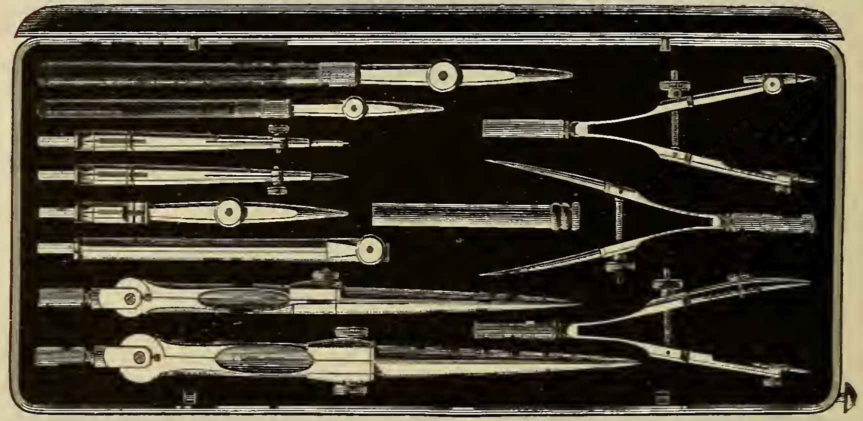
972

No. 972 contg.: No. 800. Drawing Pen, Ebony Handle, 4½ inch ;
801. " " " " 5 "
856. Steel Spring Bow Divider, Metal Handle, 3½ inch ;
857. " " Bow Pen, " " 3½ "
858. " " Bow Pencil, " " 3½ "
Pivot Joints.
961. Hair Spring Divider, 5 inch ;
963. Compass, 5½ inch, with fixed Needle Point, Pen, Pencil Point and Lengthening Bar ;
Box for Leads ;
Each......... ....$22.50

No. 973 contg. same Nos. as 972, but with Drawing Pens Nos. 803 and 804, upper blade with spring (instead of Nos. 800 and 801.)
Each.. $23.50

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."



974

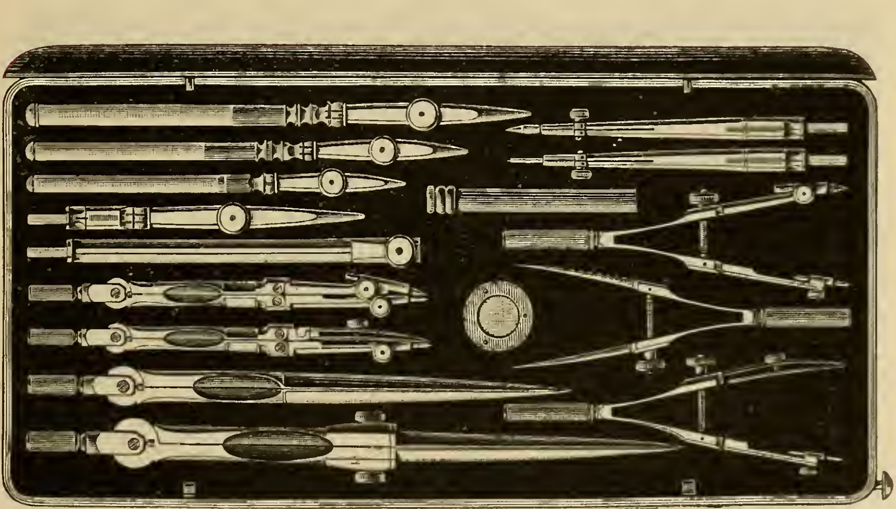
No. 974 contg.: No. 800. Drawing Pen, Ebony Handle, 4½ inch ;
801. " " " " 5 "
856. Steel Spring Bow Divider, Metal Handle, 3½ inch ;
857. " " Bow Pen, " " 3½ "
858. " " Bow Pencil, " " 3½ "
Pivot Joints. 961. Hair Spring Divider, 5 inch ;
964. Compass, 5½ inch, with 2 Steel Points, Pen, Pencil, Needle Point and Lengthening Bar ;
Box for Leads ;
Each.. $24.00

No. 975 contg.: same Nos. as 974, but with Drawing Pens Nos. 803 and 804, upper blade with spring (instead of Nos. 800 and 801.)

Each.. $24.50

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."



976

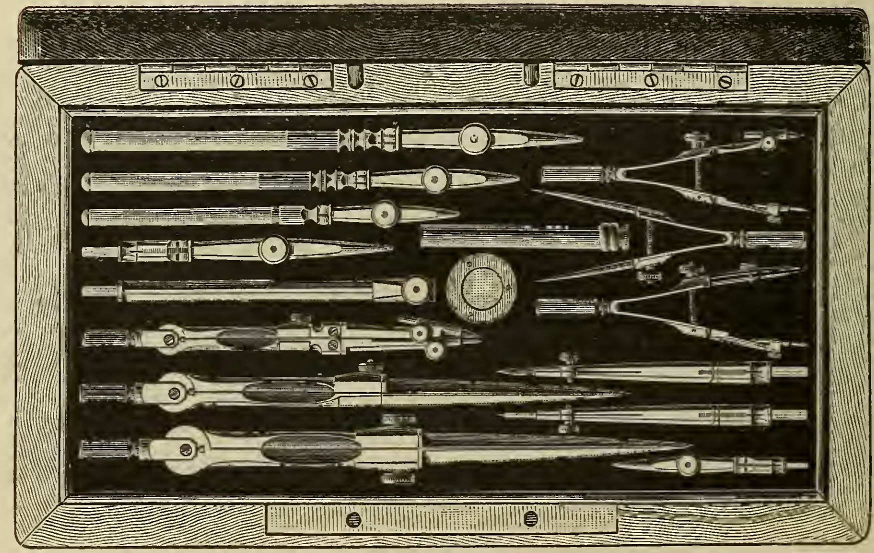
No. 976 contg.: No. 806. Drawing Pen, with joint, Ivory Handle, 4 inch ;
807. " " " " and pin, Ivory Handle, 4¾ inch :
808. " " " " " " " 5½ "
856. Steel Spring Bow Divider, Metal Handle, 3½ inch ;
857. " " Bow Pen, " " 3½ "
858. " " Bow Pencil, " " 3½ "
Pivot Joints. 953. Compass 3½ inch, with fixed Needle and Pen Point ;
954. " 3½ " " " " " Pencil "
958. Plain Divider, 5 inch ;
965. Compass 6 inch, with 2 Steel Points, Pen, Pencil, Needle Point and Lengthening Bar ;
Box for Leads ;
Horn Center with German Silver Edge ;

Each.. $35.00

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

Fine Polished Rosewood Case, with Ebony Corners, Lock and Tray.

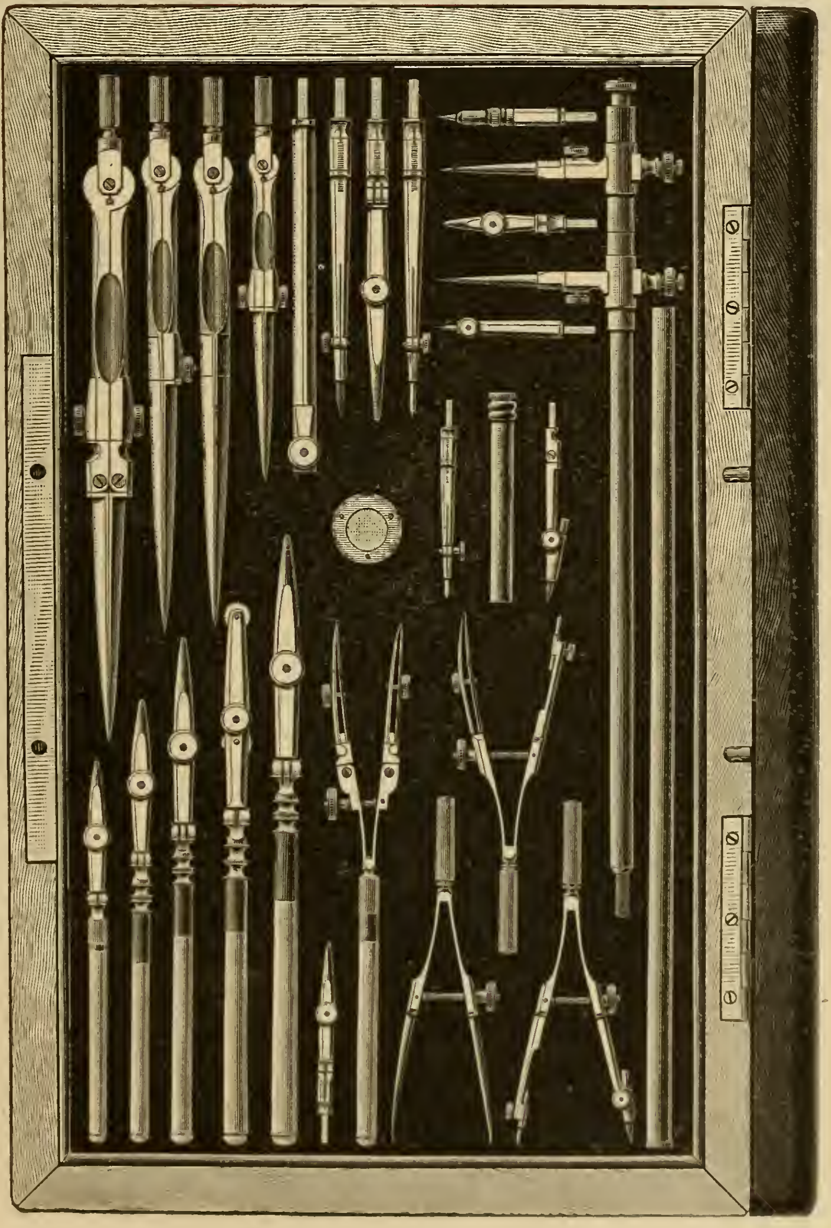


977

No. 977. contg :	No. 806.	Drawing Pen, with joint, Ivory Handle, 4 inch ;
	807.	" " and Pin, Ivory Handle, 4¾ inch ;
	808.	" " " " 5½ "
	848.	Steel Spring Bow Divider, with Metal Handle, 3 "
Pivot Joints.	849.	" Bow Pen, " 3 "
	850.	" Bow Pencil, " 3 "
	955.	Compass, 3½ inch, with fixed Needle Point, Pen and Pencil Point;
	961.	Hair Spring Divider, 5 inch ;
	964.	Compass, 5½ inch, with 2 Steel Points, Pen, Pencil, Needle Point and Lengthening Bar ;
		Box for Leads ;
		Horn Center with German Silver Edge ;

Each.. $37.50

"LENOX" SWISS INSTRUMENTS.



978

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

Fine Polished Rosewood Case, with Ebony Corners, Lock and Tray.

No. 978 contg.: No. 806. Drawing Pen, with joint, Ivory Handle, 4 inch ;
807. " " and pin, Ivory Handle, 4¾ inch ;
808. " " " " 5½ "
809. " " " " 6½ "
820. Railroad Pen, with joints to blades and in shanks, improved 5½ inch ;
822. Dotting Pen, with 6 Wheels, improved, with reservoir for ink, 6 inch ;
856. Steel Spring Bow Divider, Metal Handle, 3½ inch ;
Pivot Joints. 857. " Bow Pen, " 3½ "
858. " Bow Pencil, " 3½ "
908. Tubular Beam Compass, 18 inch, 2 Bars, with 2 Steel Points, Pen, Pencil and Needle Point ;
956. Compass, 3½ inch, with 2 Steel Points, Pen, Pencil and Needle Point ;
958. Plain Divider, 5 inch ;
961. Hair Spring Divider, 5 inch ;
966. Compass, 6 inch, with 2 Steel Points with joint in each leg, Pen, Pencil, Needle Point and Lengthening Bar ;
Box for Leads ;
Horn Center with German Silver Edge ;

Each $61.00

"LENOX"

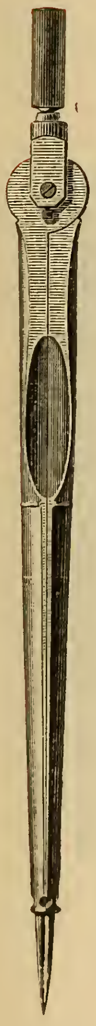
GENUINE SUPERIOR SWISS DRAWING INSTRUMENTS.

WITH PERFECT PIVOT JOINTED HEADS.

**Rounded Steel Points,
Pens without Joints, Upper Blades with Spring.**

Each Instrument Stamped "M. P. P. Co."

Illustrations ⅔ size.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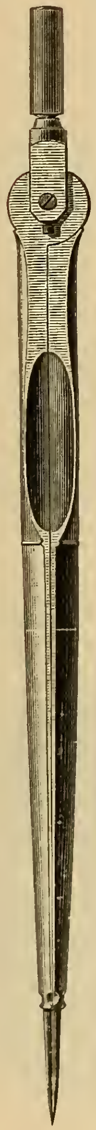
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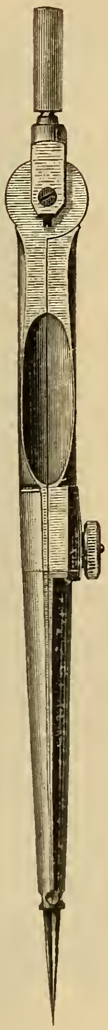
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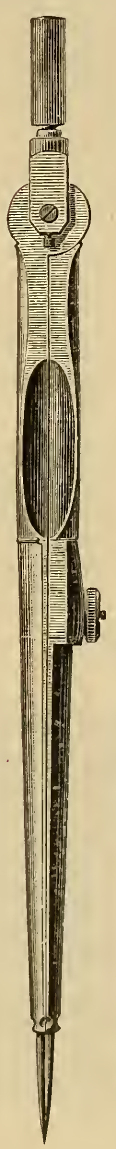
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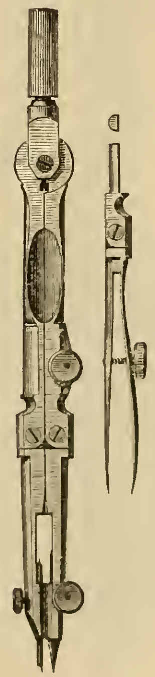
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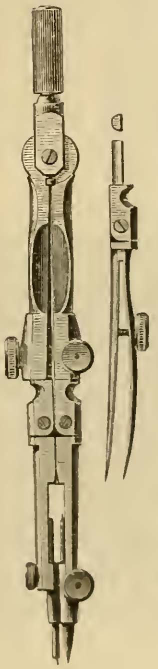
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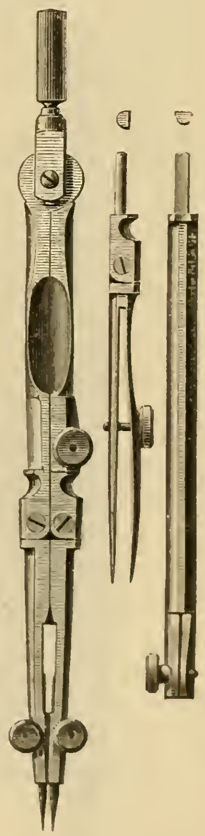
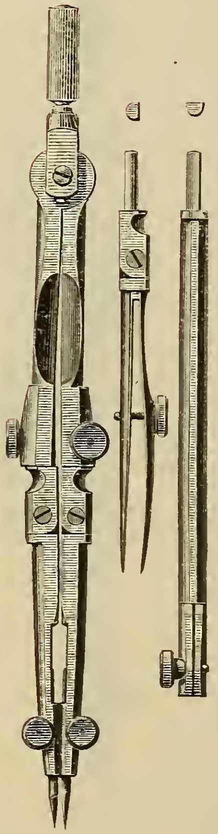

1008

		Each.
1000.	Plain Divider, 4½ inch, Rounded Points	$2.60
1001.	" 5 " "	2.75
1002.	" 6 " "	3.25
1003.	Hair Spring Divider, 4½ inch, "	3.35
1004.	" " 5 " "	3.50
1005.	" " 6 " "	4.00
1006.	Compass, 3½ inch, with fixed Needle Point, Pen and Pencil Point	6.00
1007.	" 3½ " " " Pen and Pencil Point, with Hair Spring	7.00
1008.	" 4½ " " " Pen, Pencil Point and Lengthening Bar	7.25

"LENOX" SWISS INSTRUMENTS.

Each Instrument Stamped "M. P. P. Co."

Illustrations ⅔ size.



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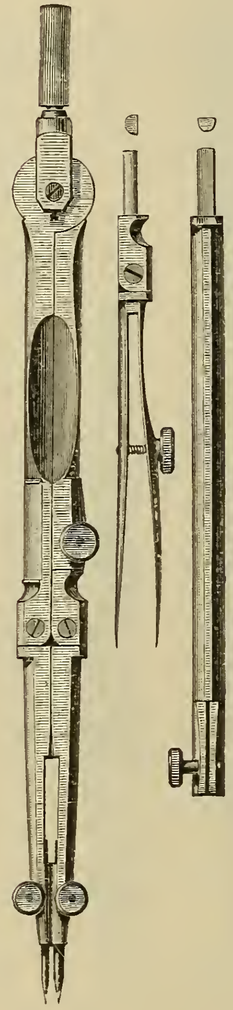

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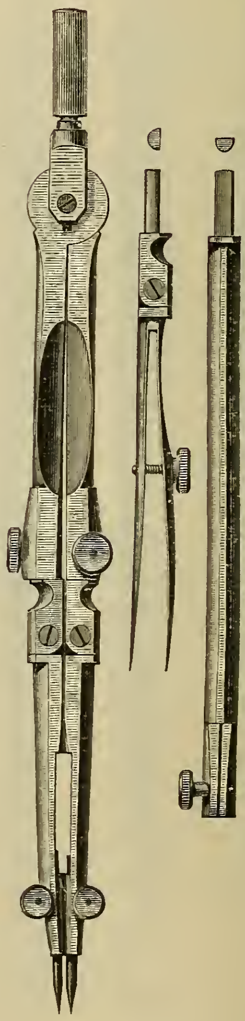


1011

		Each.
1009.	Compass, 4½ inch, with fixed Needle Point, Pen, Pencil Point, and Lengthening Bar, with Hair Spring	$8.25
1010.	Compass, 5½ inch, with fixed Needle Point, Pen, Pencil Point and Lengthening Bar	7.00
1011.	Compass, 5½ inch, with fixed Needle Point, Pen, Pencil Point and Lengthening Bar, with Hair Spring	8.00

"LENOX"

GENUINE SUPERIOR SWISS DRAWING INSTRUMENTS.

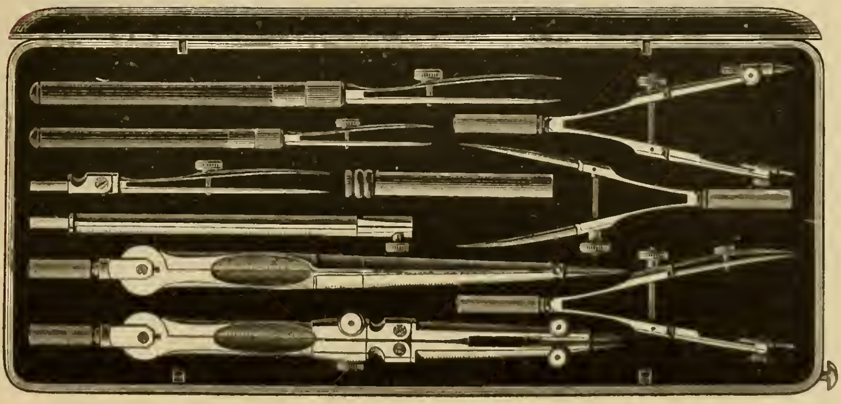
WITH PERFECT PIVOT JOINTED HEADS,

Rounded Steel Points, Pens without Joints, Upper Blade with Spring, in Morocco Pocket Cases, with Bar Lock, Lined with Finest Silk Velvet.

Each Instrument Stamped "M. P. P. Co."

No. 1025 contg.: No. 803. Drawing Pen, upper Blade with Spring, Ebony Handle, 4½ inch ;
804. " " " " 5 "
856. Steel Spring Bow Divider, Metal Handle, 3½ "
857. " Bow Pen, " 3½ "
858. " Bow Pencil, " 3½ "
1004. Hair Spring Divider, 5 inch, rounded Steel Points ;
Pivot Joints. 1010. Compass, 5½ inch, with fixed Needle Point, Pen, upper Blade with Spring, Pencil Point, and Lengthening Bar ;
Box for Leads ;

Each.. $22.75



1026.

No. 1026 contg.: No. 803. Drawing Pen, upper Blade with Spring, Ebony Handle, 4½ inch ;
804. " " " " 5 "
856. Steel Spring Bow Divider, Metal Handle, 3½ "
857. " Bow Pen, " 3½ "
858. " Bow Pencil, " 3½ "
1001. Plain Divider, 5 inch, rounded Steel Points ;
Pivot Joints. 1011. Compass 5½ inch, with fixed Needle Point, *with Hair Spring*, Pen, upper Blade with Spring, Pencil Point and Lengthening Bar ;
Box for Leads ;

Each.. $23.00

"LENOX"

GENUINE SUPERIOR SWISS DRAWING INSTRUMENTS.

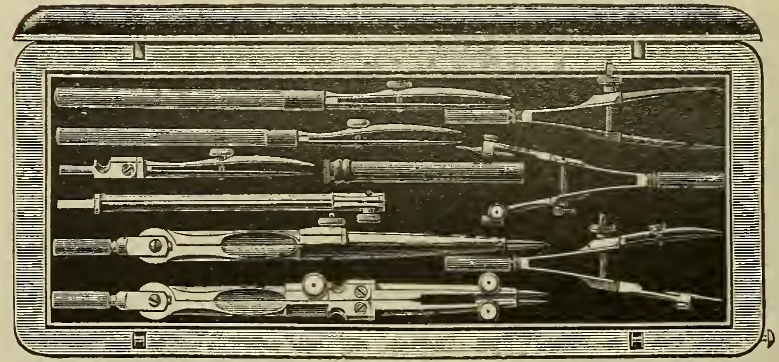
WITH PERFECT PIVOT JOINTED HEADS,

Rounded Steel Points, Pens without Joints, Upper Blade with Spring, in Morocco Pocket Cases, with Bar Lock, Lined with Finest Silk Velvet.

Each Instrument Stamped "M. P. P. Co."

No. 1027 contg.:	No. 803.	Drawing Pen, upper Blade with Spring, Alum. Handle, 4½ inch;
	804.	“ “ “ “ 5 “
	848.	Steel Spring Bow Divider, Metal Handle, 3 “
	849.	“ Bow Pen, “ 3 “
	850.	“ Bow Pencil, “ 3 “
	1003.	Hair Spring Divider, 4½ inch, rounded Steel Points;
Pivot Joints.	1008.	Compass, 4½ inch, with fixed Needle Point, Pen, upper Blade with Spring, Pencil Point and Lengthening Bar;
		Box for Leads;

Each $22.00



1027

No. 1028 contg.:	No. 803.	Drawing Pen, upper Blade with Spring, Alum. Handle, 4½ inch;
	804.	“ “ “ “ 5 “
	848.	Steel Spring Bow Divider, Metal Handle, 3 “
	849.	“ Bow Pen, “ 3 “
	850.	“ Bow Pencil, “ 3 “
	1000.	Plain Divider, 4½ inch, rounded Steel Points;
Pivot Joints.	1009.	Compass, 4½ inch, with fixed Needle Point, *with Hair Spring*, Pen, upper Blade with Spring, Pencil Point and Lengthening Bar;
		Box for Leads;

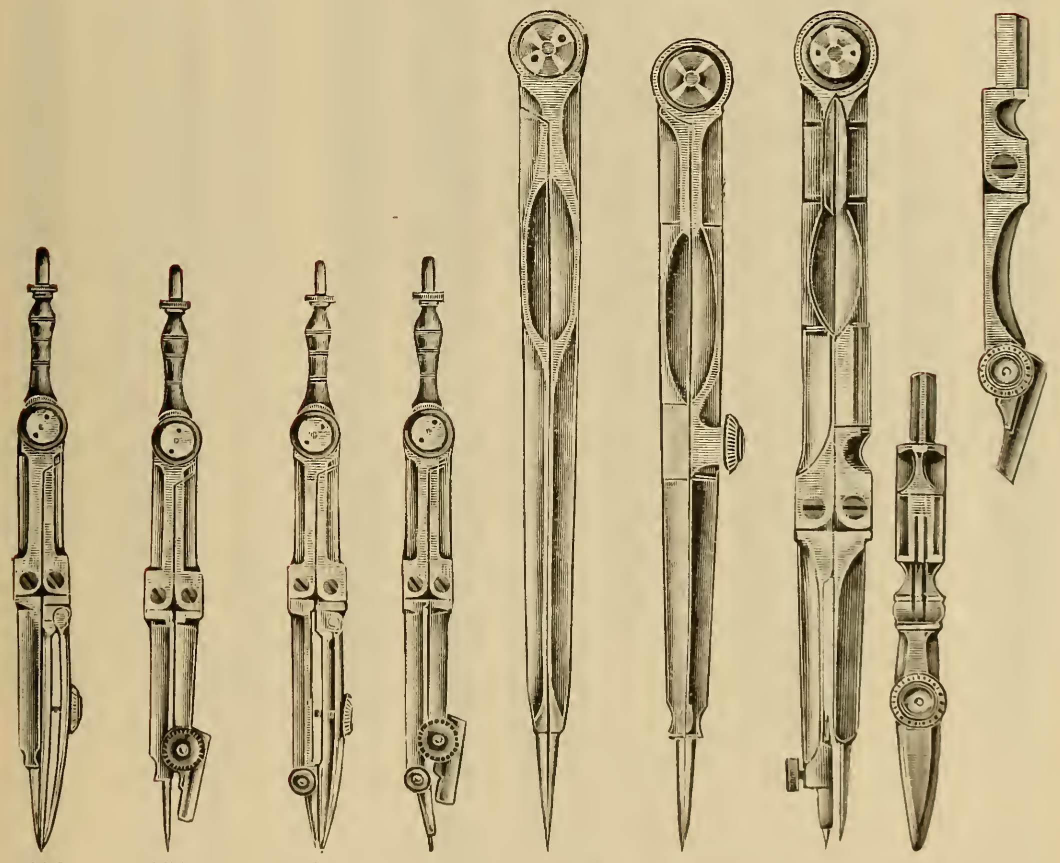
Each .... $ 22.50

ENGLISH

DRAWING INSTRUMENTS.

Of Best German Silver, Highest Finish, Double Sector Joint.

Illustrations ⅔ size.

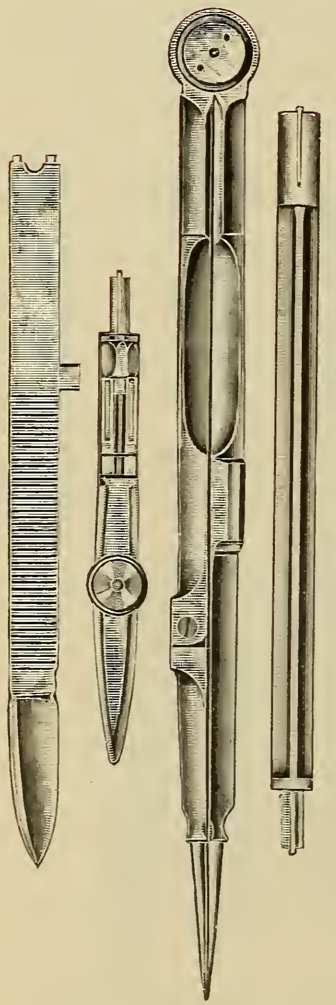


		Each.
1050.	Bow Pen, with Steel Point, 3½ inch	$3.25
1051.	“ Pencil, “ “ 3½ “	3.25
1052.	“ Pen, with Needle Point, 3½ inch	4.00
1053.	“ Pencil, “ “ 3½ “	4.00
1054.	Plain Divider, 5 inch	2.00
1055.	Hair Spring Divider, 5 inch	3.00
1056.	Compass, 6 inch, with Needle Point, Pen and Pencil Parts	10.00

ENGLISH

DRAWING INSTRUMENTS.

Illustrations ⅔ size.



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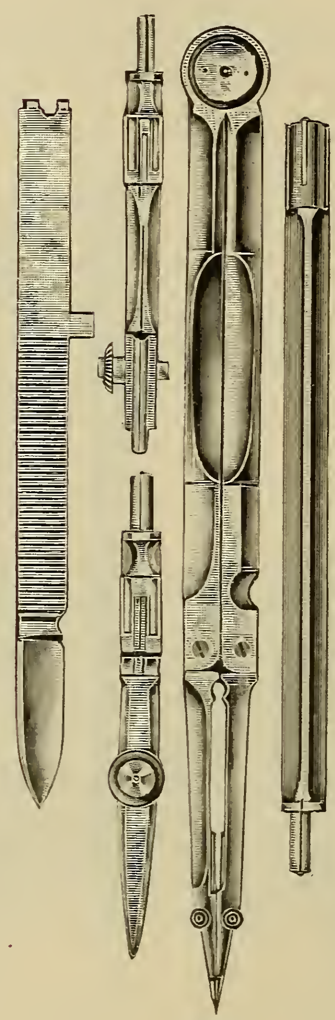

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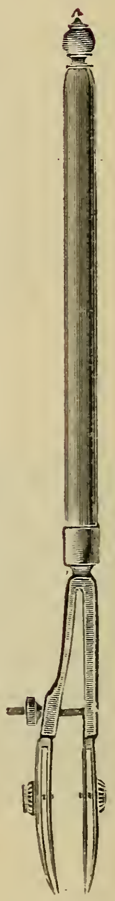

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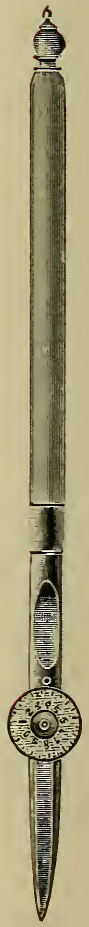


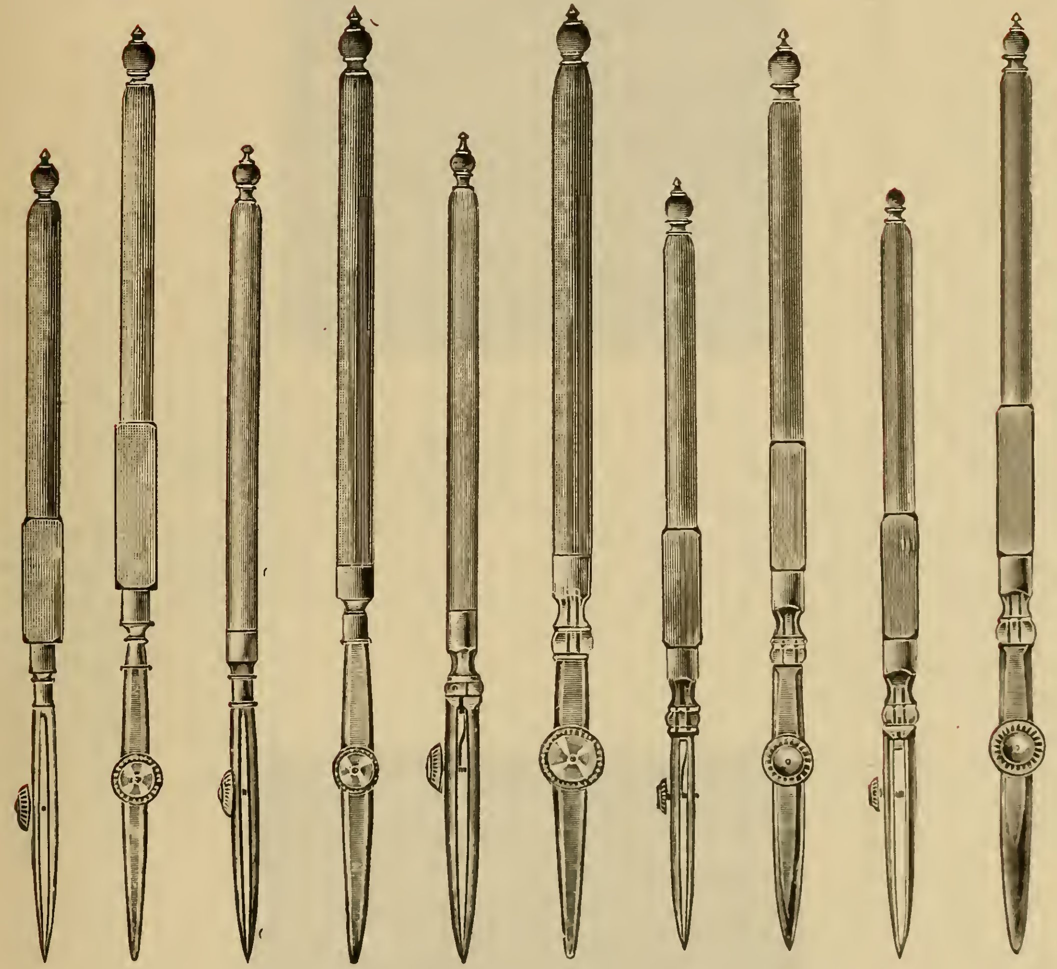
1060

		Each.
1057.	Compass, 6 inch, with jointed Steel Point, Pen, Pencil, Lengthening Bar and Knife Key	$10.00
1058.	Compass, 6 inch, with 2 Needle Points, Pen, Pencil, Lengthening Bar and Knife Key	13.50
1059.	Railroad Pen, 5¾ inch	3.25
1060.	Divided Screw Pen, 5¾ inch	2.25

ENGLISH

DRAWING INSTRUMENTS.

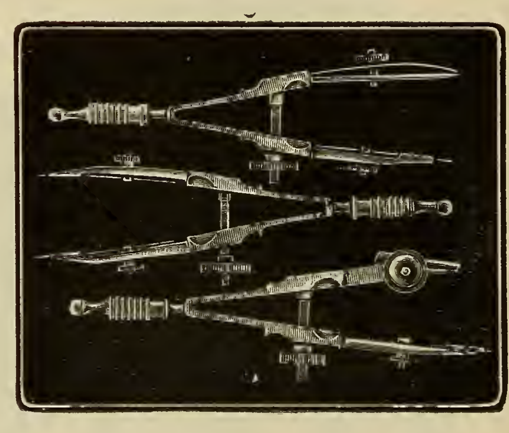
Illustrations ⅔ size.



					Each.
1061.	Drawing Pen,	4½	inch,	Heavy Back, Square Ivory Handle..........	$1.85
1062.	“	6	“	“ “ “	2.10
1063.	“	4½	“	Round Ivory Handle..............................	1.30
1064.	“	6	“	“ “	1.50
1065.	“	4½	“	Hinge Blade, Round Ivory Handle.........	1.50
1066.	“	6	“	“ “ “	1.85
1067.	“	4½	“	“ Square “	1.85
1068.	“	6	“	“ “ “	2.15
1069.	“	4½	“	“ Heavy Back nib, Square Ivory Handle.......	2.50
1070.	“	6	“	“ “ “ “ “	2.75

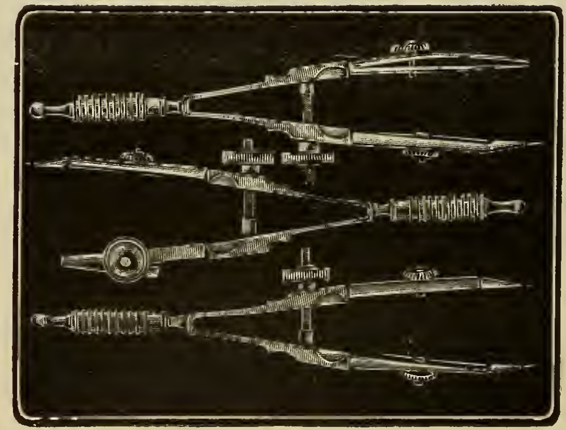
ENGLISH

DRAWING INSTRUMENTS.



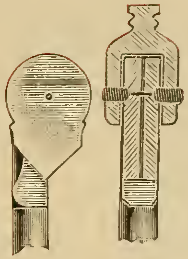
1071

No. 1071. Elegant Morocco Case, lined with Silk Velvet, containing :
2½ inch Bow Divider, with Needle Points ;
2½ " Bow Pen ;
2½ " Bow Pencil ; Each......... $9.50



1072

No. 1072. Elegant Morocco Case, lined with Silk Velvet, containing :
3 inch Bow Divider, with Needle Points ;
3 " Bow Pen ;
3 " Bow Pencil ; Each......... $10.00



GERMAN

ROUND SYSTEM DRAWING INSTRUMENTS.

The growing popularity of the "Round System," and the expiration of the patents on this form, resulted in the best manufacturers of instruments adding the same to their productions. We have secured a line of these instruments which are equal, if not superior, to the production of the original patentee, since they are made by those who have had years of experience in the manufacture of drawing instruments, and employ only the best materials and workmanship.

To some the "Round System" is preferable to the "Swiss Pattern," and the quality we offer is guaranteed to be unsurpassed by any make of this style of instrument.

The smoothness of the joints and the ease and rapidity with which interchangeable parts can be adjusted, recommends these instruments where constant use is required. The round form of the parts will be found very easy to handle compared with the usual angular construction, and much easier to keep clean.

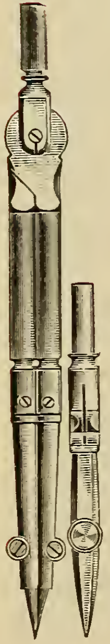
The materials used in the construction of these instruments are the same as used for our "Lenox" instruments, and can be depended upon to be of the best kind for the purpose.

GERMAN

ROUND SYSTEM DRAWING INSTRUMENTS.

Superfine Quality, Best German Silver and English Steel, Highest Finish.

Illustrations ⅔ size.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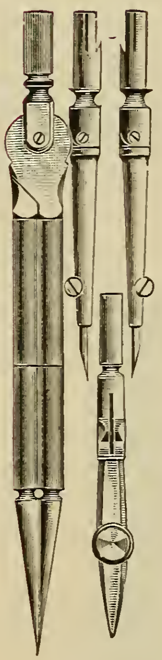
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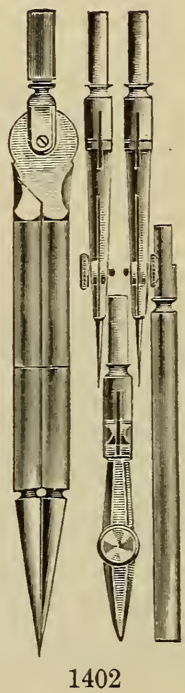
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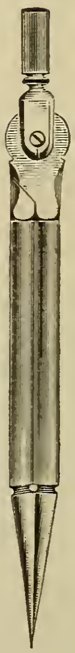
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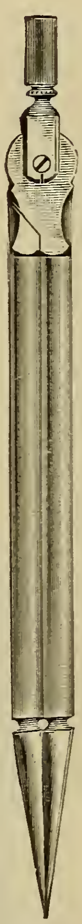
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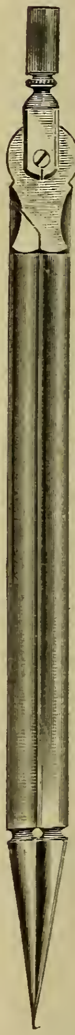
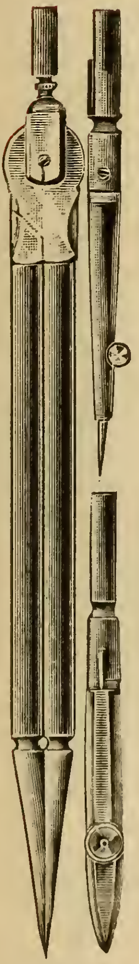

1405

		Each.
1400.	Compass, 3½ inch, with fixed Needle Point, Pen and Pencil parts..	$4.80
1401.	" 3½ " " Pen, Pencil and Needle Point parts	5.40
1402.	" 3½ " same as No. 1401, with Lengthening Bar...........	6.00
1403.	Plain Divider, 3½ inch, Round Steel Points..................................	1.80
1404.	" 5 " " "	2.10
1405.	" 5½ " " "	2.40

GERMAN

ROUND SYSTEM DRAWING INSTRUMENTS.

Illustrations ⅔ size.



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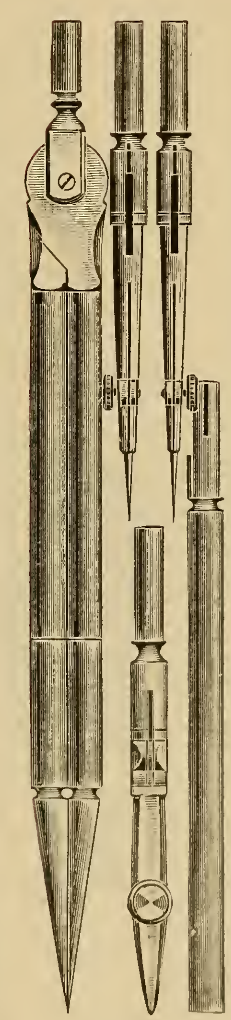
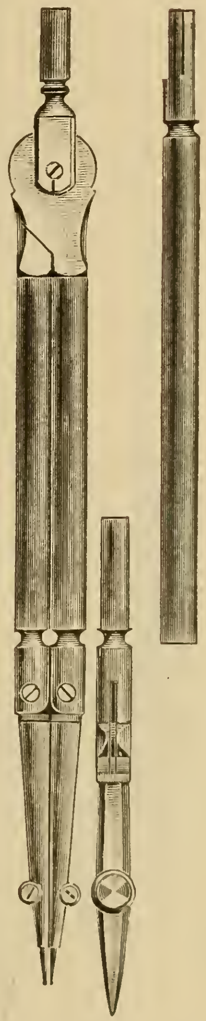


1407



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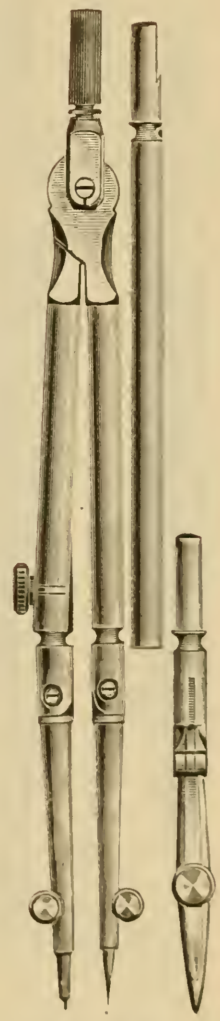


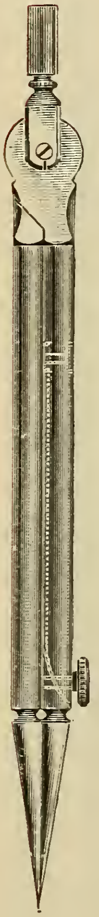
1409

		Each
1406.	Compass, 5½ inch, with Round Steel Points, Pencil and Pen parts..	$5.00
1407.	" 5½ " " " . " with Needle, Pencil and Pen parts, and Lengthening Bar..	7.20
1408.	Compass, 5½ inch, with fixed Needle Point, Pencil and Pen parts, and Lengthening Bar	6.3
1409.	Compass, 5½ inch, same as No. 1408, with Hair Spring on fixed Needle Point.............	7.5

GERMAN

ROUND SYSTEM DRAWING INSTRUMENTS.

Illustrations ⅔ size.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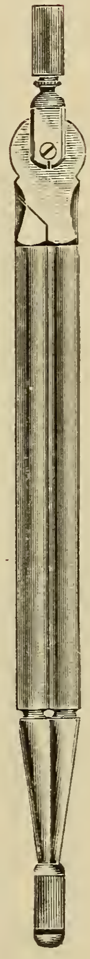
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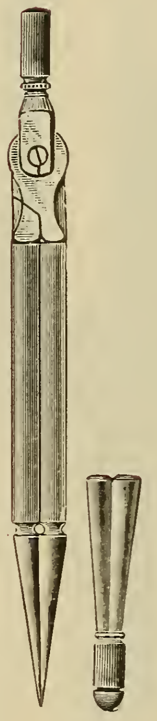
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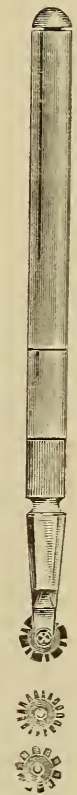
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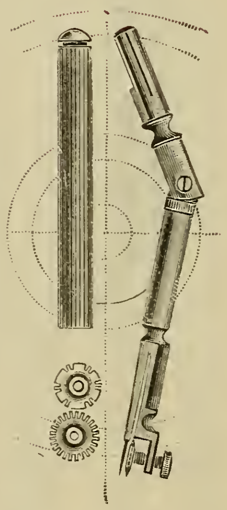
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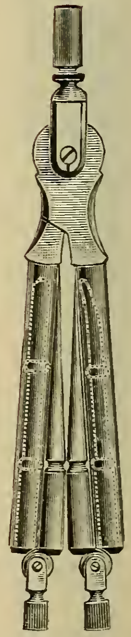
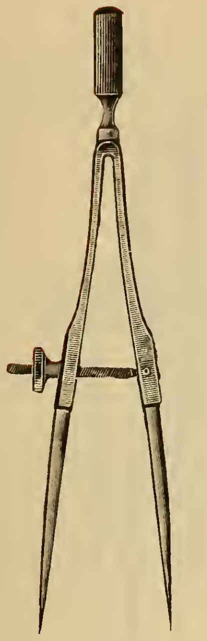

1417

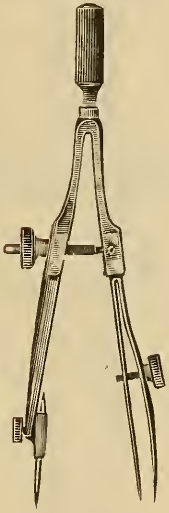
		Each.
1410.	Hair Spring Divider, 5 inch, Round Steel Points	$3.00
1411.	Pocket Divider, with Sheath, 5 inch	2.75
1412.	" " " 3½ "	2.40
1413.	Dotting Pen, with 3 Wheels, Ivory Handle	2.40
1414.	" " 3 " " in Leather Case	2.75
1415.	" " 3 " with Milled Metal Handle, Pen part removable, and with Joint to fit in Dividers Nos. 1407 and 1408, for Drawing Circles or Straight Lines	3.25
1416.	Same as No. 1415, in Leather Case	3.60
1417.	Pocket Compass, 4¾ inch, with Pen and Pencil parts, which can be withdrawn, each part forming a separate Bow Pen and Pencil, in Leather Case	9.00

GERMAN
ROUND SYSTEM DRAWING INSTRUMENTS.

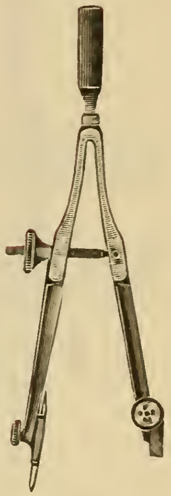
Illustrations ⅔ size.



1420

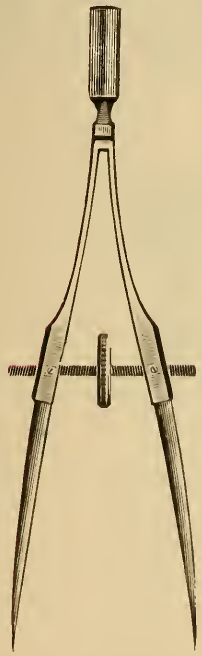


1421



1422

			Each.
1420.	Steel Spring	Bow Divider, 4 inch, Metal Handle..........................	$1.75
1421.	“	Bow Pen, with Needle Point, 3 inch, Metal Handle, Spring on Pen	2.25
1422.	“	Bow Pencil, with Needle Point, 3 inch, Metal Handle	2.25
1423.	“	Bows, set of 3, Nos. 1420, 1421 and 1422, in Leather Case	7.00



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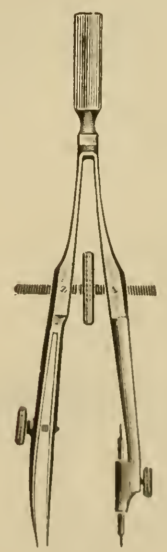
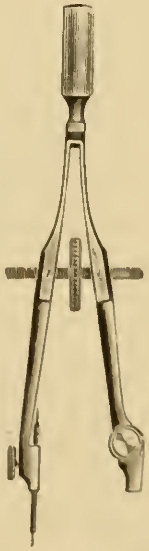


1425

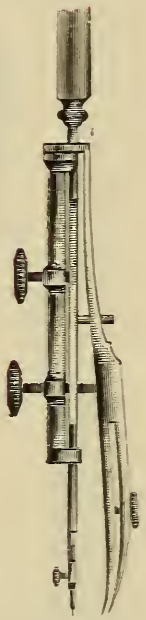


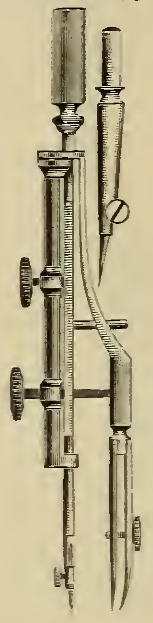
1426

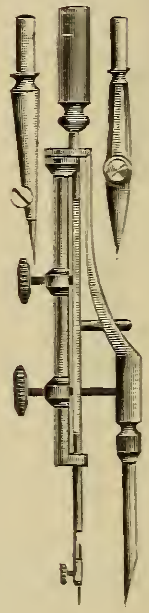
			Each.
1424.	Steel Spring	Bow Divider, 3¾ inch, with Nut between Shanks........	$2.50
1425.	“	Bow Pen. 3¼ “ Needle Point, with Nut between Shanks.	3.00
1426.	“	Bow Pencil, 3¼ “ “ “ “	3.00
1427.	“	Bows, set of 3, Nos. 1424, 1425 and 1426, in Leather Case	9.50

GERMAN
ROUND SYSTEM DRAWING INSTRUMENTS.

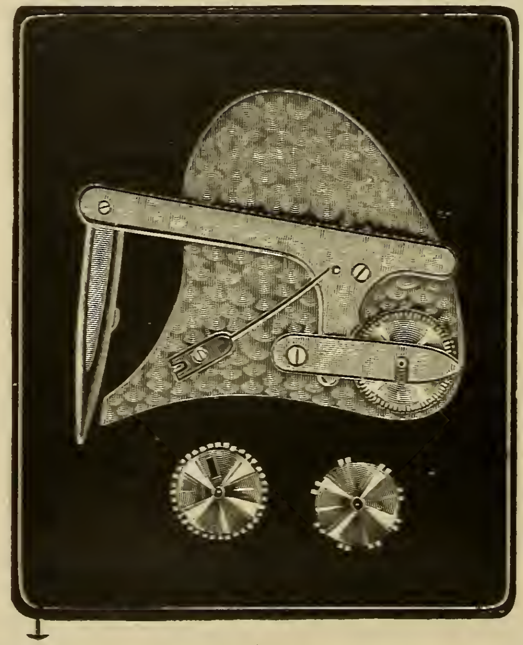
Illustrations ⅔ size.


1428


1429


1430

		Each.
1428.	Steel Spring Bow Pen, 3½ inch, with Pen part sliding and self-adjusting, for very small circles	$2.75
1429.	Steel Spring Bow Pen, same as No. 1428, with Pencil part	4.20
1430.	" " " 1429, " Needle Point	5.00

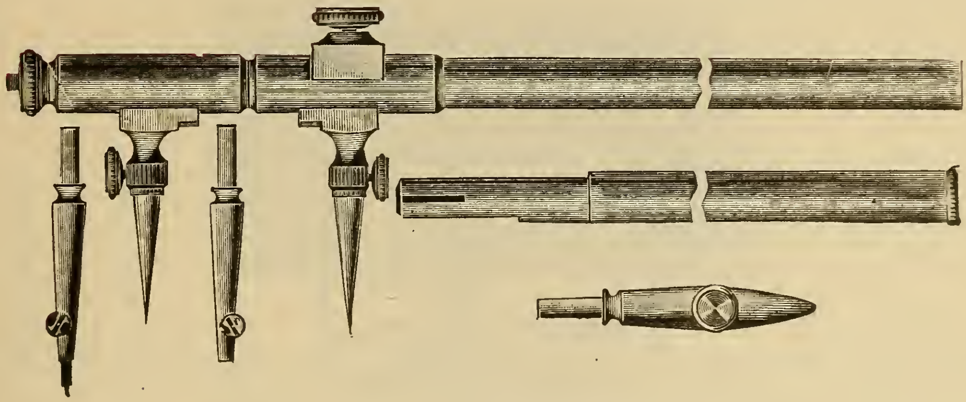

1431

		Each.
1431.	Dotting Instrument, with 3 Wheels, in Morocco Case	$2.75
1432.	Extra Wheels for making any desired line	.25

GERMAN

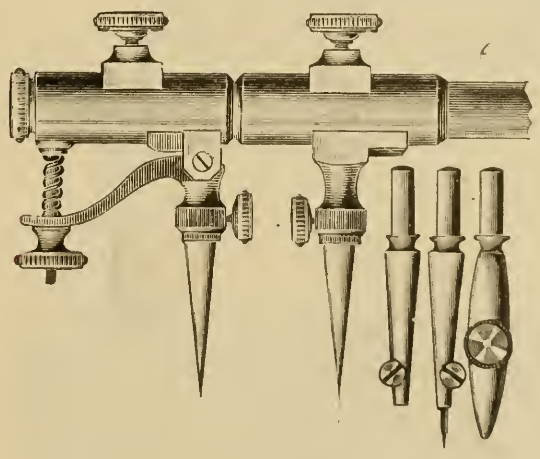
ROUND SYSTEM DRAWING INSTRUMENTS.

Illustrations ⅔ size.



1435

		Each.
1435.	Tubular Beam Compass, 18 inches, with Bars, $\frac{5}{16}$ inch diameter, Micrometer Attachment, Pen, Pencil and Needle Point parts....	$ 9.60
1436.	Same, in Leather Case..	11.40
1437.	Tubular Beam Compass, same as No. 1435, 25 in. long, with 3 Bars	11.40
1438.	Same, in Leather Case..	13.50



1439

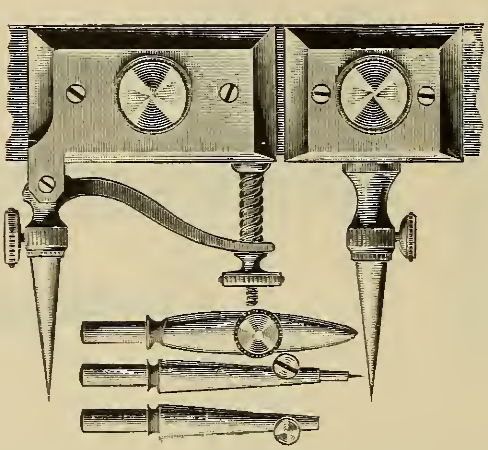
1441

		Each.
1439.	Tubular Beam Compass, 39 inches, three Bars, $\frac{3}{8}$ inch diameter, Improved Micrometer Attachment, Pen, Pencil and Needle Point parts..	$18.00
1440.	Same, in Leather Case..	20.50
1441.	Knife Point Attachment for No. 1439..	1.00

GERMAN

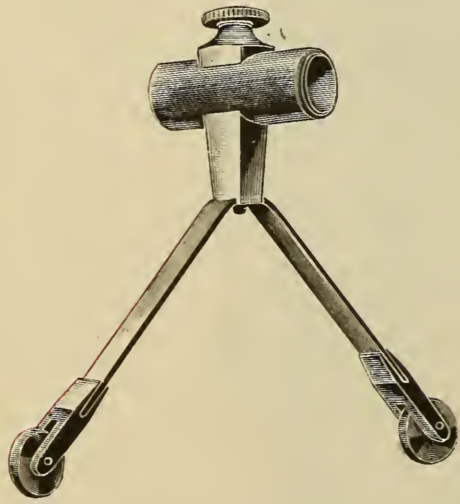
ROUND SYSTEM DRAWING INSTRUMENTS.

Illustrations ⅔ size.

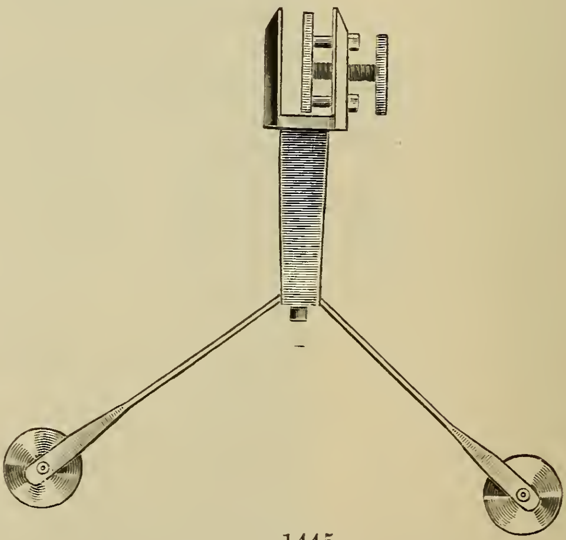


1442

		Each.
1442.	Beam Compass, with Improved Micrometer Attachment, Pen, Pencil and Needle Point parts..	$ 8.40
1443.	Same, in Leather Case..	9.60



1444



1445

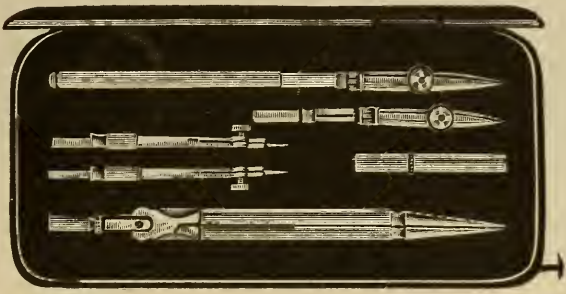
		Each.
1444.	Wheel Attachment for Beam Compass No. 1439..............................	$ 2.75
1445.	" " " " " " 1442..........................	2.75

SEE PAGE 174 FOR BEAM COMPASS BARS.

GERMAN

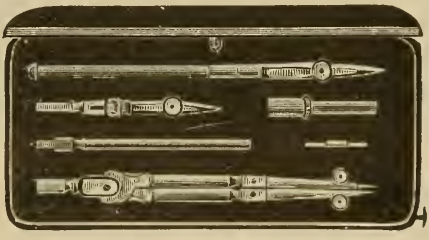
ROUND SYSTEM DRAWING INSTRUMENTS.

IN MOROCCO CASES, LINED WITH SILK VELVET.



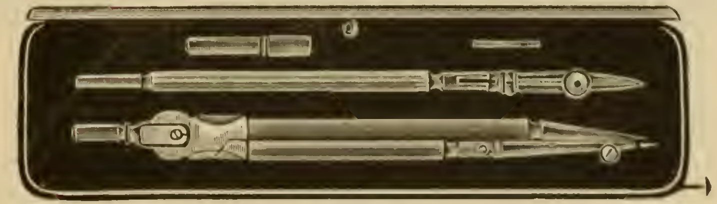
1450

No. 1450 contg.: No. 1401. Compass, with Pen, Pencil and Needle Point parts, 3½ inches;
803. Ruling Pen, with Spring, Ebony Handle, 4½ inch:
Box of Leads;
Each..$7.25



1451

No. 1451 contg.: No. 1402. Compass, with Needle Points, Pen and Pencil parts, and Lengthening Bar, 3½ inches;
803. Ruling Pen, with Spring, Ebony Handle, 4½ inch:
Box of Leads;
Each..$7.50

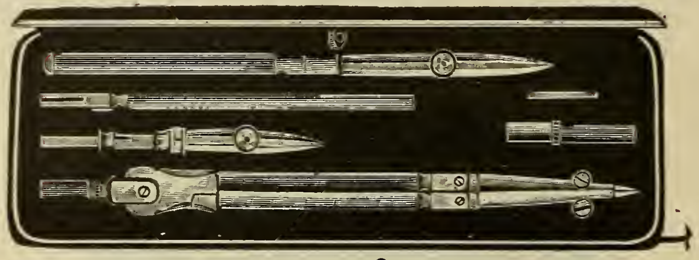


1452

No. 1452 contg.: No. 1408. Compass, with fixed Needle Point, Pen and Pencil parts, Lengthening Bar with milled edge to use as a handle for Pen part, 5½ inches long;
Box of Leads;
Each..$7.00

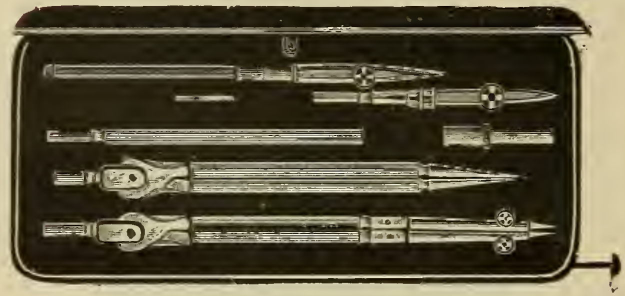
GERMAN

ROUND SYSTEM DRAWING INSTRUMENTS.



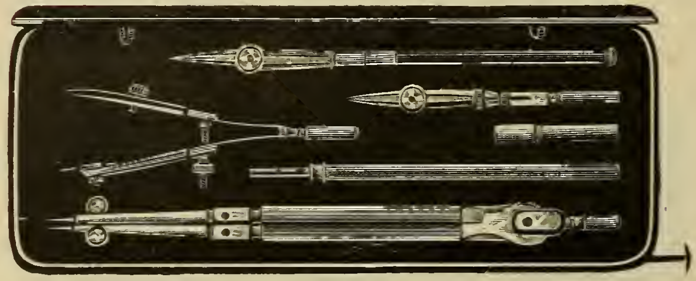
1453

No. 1453 contg.: No. 1408. Compass, with fixed Needle Point, Pen and Pencil parts, and Lengthening Bar, 5½ inch ;
805. Ruling Pen, with Spring, Ebony Handle, 5½ inch ;
Box of Leads ;
Each..$8.75



1454

No. 1454 contg.: No. 1408. Compass, with fixed Needle Point, Pen and Pencil parts, and Lengthening Bar, 5½ inch ;
1404. Plain Divider, 5 inch ;
805. Ruling Pen, with Spring, Ebony Handle, 5½ inch ;
Box of Leads ;
Each..$11.00

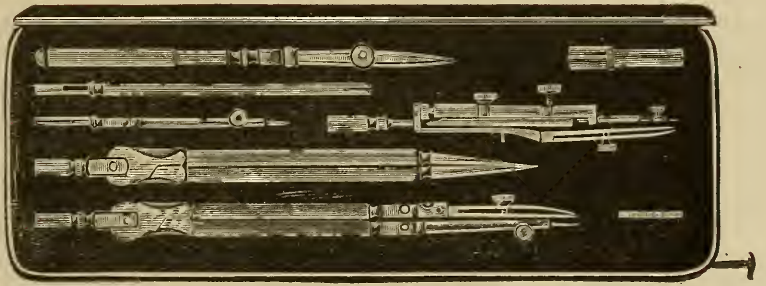


1455

No. 1455 contg.: No. 1408. Compass, with fixed Needle Point, Pen and Pencil parts, and Lengthening Bar, 5½ inch ;
1421. Steel Spring Bow Pen, with Needle Point, 3 inch ;
805. Ruling Pen, with Spring, Ebony Handle, 5½ inch;
Box of Leads ;
Each..$11.25

GERMAN

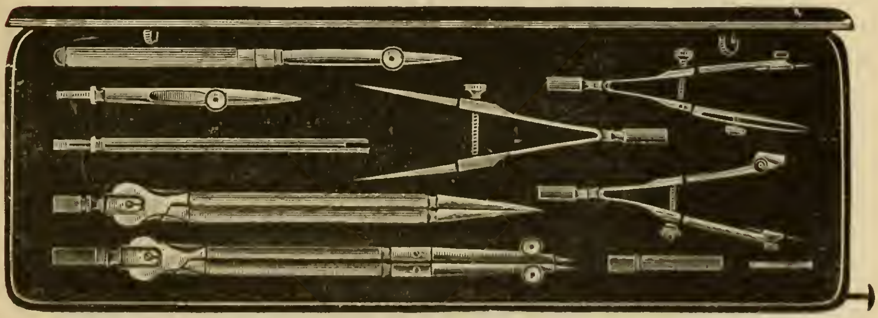
ROUND SYSTEM DRAWING INSTRUMENTS.



1456

No. 1456 contg.: No. 1408. Compass, 5½ inch, with fixed Needle Point, Pen and Pencil parts, and Lengthening Bar ;
1404. Plain Divider, 5 inch ;
1428. Adjustable Bow Pen ;
805. Ruling Pen, with Spring, Ebony Handle, 5½ inch ;
Box of Leads ;

Each...$14.40



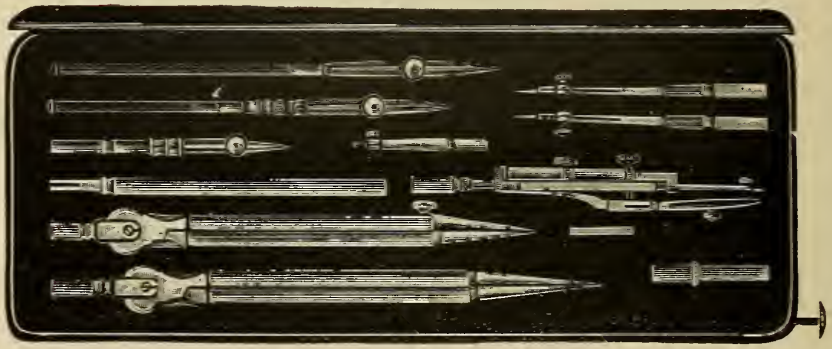
1457

No. 1457 contg.: No. 1408. Compass, 5½ inch, with fixed Needle Point, Pen and Pencil parts, and Lengthening Bar ;
1404. Plain Divider, 5 inch ;
1420. Steel Spring Bow Divider, 4 inch ;
1421. " " " Pen, 3 inch, with Needle Point ;
1422. " " " Pencil, 3 inch, with Needle Point ;
805. Ruling Pen, with Spring, Ebony Handle, 5½ inch ;
Box of Leads ;

Each...$18.00

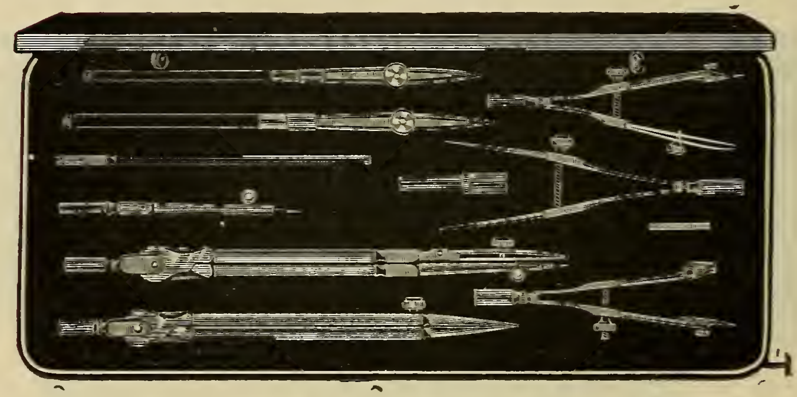
GERMAN

ROUND SYSTEM DRAWING INSTRUMENTS.



1458

No. 1458 contg.: No. 1407. Compass, 5½ inch, with Pen, Pencil and Needle Point parts, and Lengthening Bar ;
1410. Hair Spring Divider, 5 inch ;
1429. Adjustable Bow Pen, with Pencil parts ;
805. Ruling Pen, with Spring, Ebony Handle, 5½ inch;
804. " " " " " " 5 "
Box of Leads :
Each..... .... $19.50

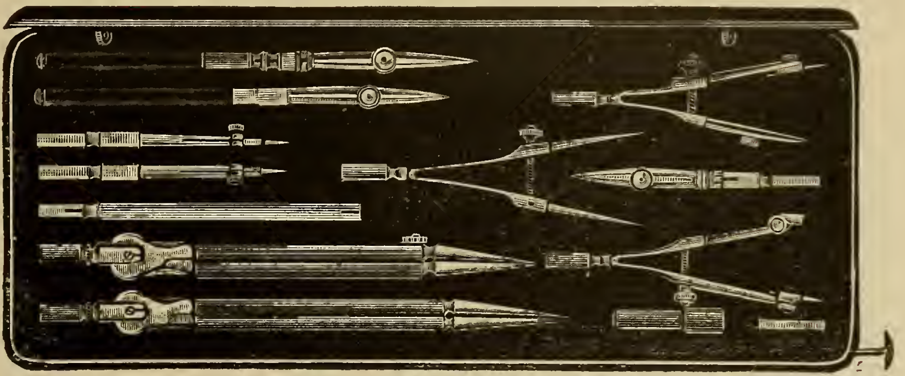


1459

No. 1459 contg.: No. 1408. Compass, 5½ inch, with fixed Needle Point, Pen and Pencil parts, and Lengthening Bar ;
1410. Hair Spring Divider, 5 inch ;
1420. Steel Spring Bow Divider, 4 inch ;
1421. " " " Pen, with Needle Point, 3 inch ;
1422. " " " Pencil, " " 3 "
805. Ruling Pen, with Spring, Ebony Handle, 5½ inch;
804. " " " " " " 5 "
Box of Leads ;
Each.. $20.00

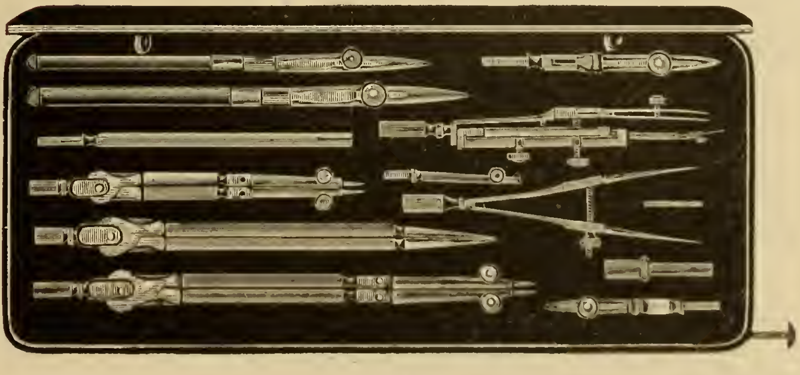
GERMAN

ROUND SYSTEM DRAWING INSTRUMENTS.



1460

No. 1460 contg.: No. 1407. Compass, 5½ inch, with Pen, Pencil and Needle Point parts, and Lengthening Bar;
1410. Hair Spring Divider, 5 inch;
1420. Steel Spring Bow Divider, 4 inch;
1421. " " " Pen, with Needle Point, 3 inch;
1422. " " " Pencil, " " " 3 "
805. Ruling Pen, with Spring, Ebony Handle, 5½ inch;
804. " " " " " " 5 "
Box of Leads;
Each $21.50

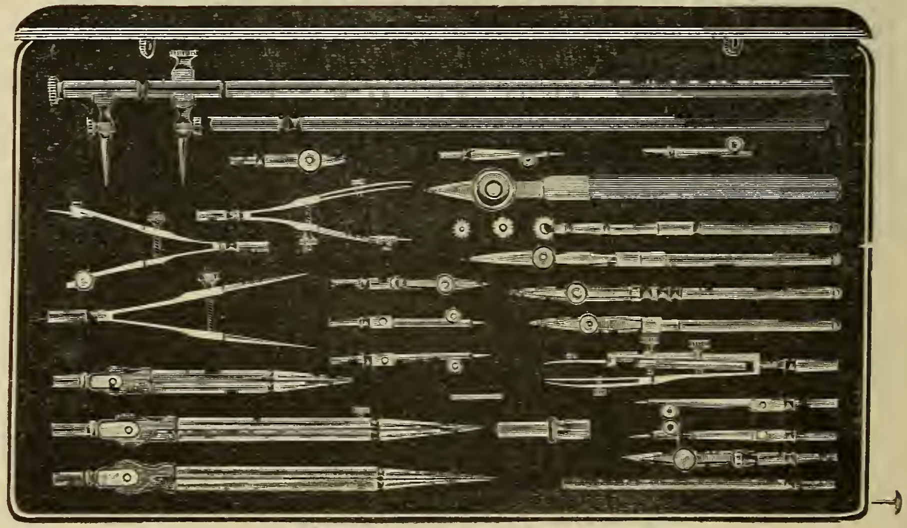


1461

No. 1461 contg.: No. 1408. Compass, 5½ inch, with fixed Needle Point, Pen and Pencil parts, and Lengthening Bar;
1400 Compass, 3½ inch, with fixed Needle Point, Pen and Pencil parts;
1410. Plain Divider, 5 inch;
1420. Steel Spring Bow Divider, 4 inch;
1429. Adjustable Bow Pen, with Pencil parts;
805. Ruling Pen, with Spring, Ebony Handle, 5½ inch;
804. " " " " " " 5 "
Box of Leads;
Each $24.00

GERMAN

ROUND SYSTEM DRAWING INSTRUMENTS.

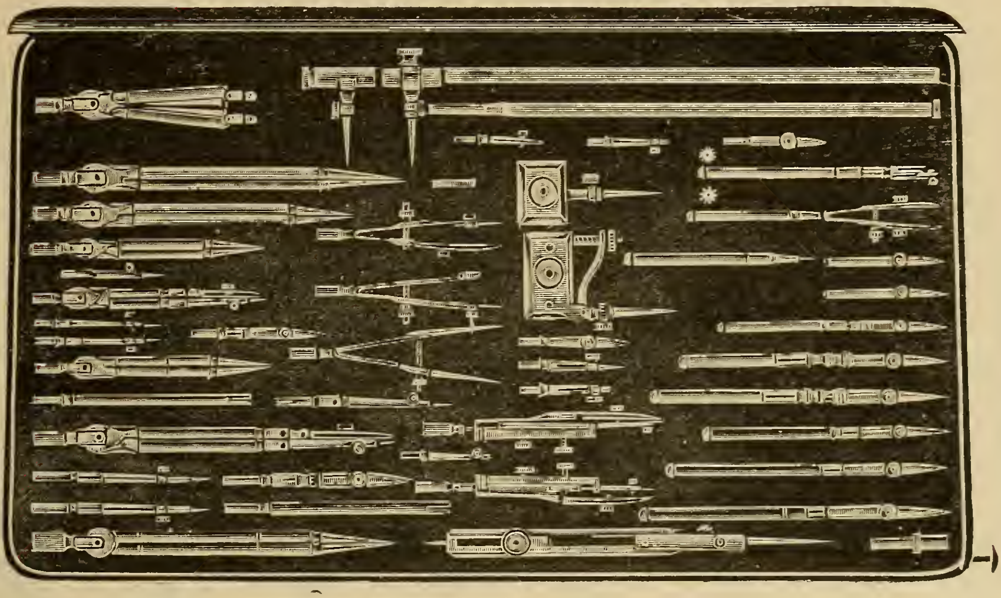


1462

No. 1462 contg.: No. 1407. Compass, 5½ inch, with Pen, Pencil and Needle Point parts, and Lengthening Bar ;
1401. Compass, 3½ inch with Pen, Pencil and Needle Point parts ;
1410. Hair Spring Divider, 5 inch ;
1420. Steel Spring Bow Divider, 4 inch ;
1421. " " " Pen, with Needle Point, 3 inch :
1422. " " " Pencil, " " " 3 "
1428. Adjustable Bow Pen :
1435. Beam Compass, with 2 Bars, Micrometer Attachment, Pen, Pencil and Needle Point parts, 18 inch ;
812. Swedish Ruling Pen, 6 inch :
808. Ruling Pen, with Joint and Needle, 5½ inch ;
805. " " " Spring, Ebony Handle, 5½ inch:
803. " " " " " " 4½ "
1415. Dotting Pen, 3 Wheels, Pen part to fit Divider for drawing circles ;
Box of Leads ;

Each..$46.00

GERMAN
ROUND SYSTEM DRAWING INSTRUMENTS.



1463

No. 1463 contg.: No. 1407. Compass, 5½ inch, with Pen, Pencil and Needle Point parts, and Lengthening Bar ;
1408. Compass, 5½ inch, with fixed Needle Point, Pen and Pencil parts, and Lengthening Bar ;
1401. Compass, 3½ inch, with Pen, Pencil and Needle Point parts ;
1400. Compass, 3½ inch, with fixed Needle Point, Pen and Pencil parts ;
1405. Plain Divider, 5½ inch ;
1404. “ 5 “
1403. “ 3½ “
1417. Pocket Divider, with Pen and Pencil parts ;
1420. Steel Spring Bow Divider, 4 inch ;
1421. “ Bow Pen, with Needle Point, 3 inch ;
1422. “ Bow Pencil, “ 3 “
1428. Adjustable Bow Pen ;
1429. “ Bow Pen, with Pencil part ;
895. Proportional Divider, 7½ inch ;
1435. Tubular Beam Compass, with 2 Bars, Micrometer Attachment, Pen, Pencil and Needle Point parts, 18 inch ;
1442. Beam Compass, with Pen, Pencil and Needle Point parts ;
805. Ruling Pen, with Spring, Ebony Handle, 5½ inch ;
804. “ “ “ 5 “
803. “ “ “ 4½ “
808. “ with Joint, Ivory Handle, 5½ “
807. “ “ “ 4¾ “
806. “ “ “ 4 “
Hatching Pen, Ivory Handle, with Needle Point ;
Extra Pen for Hatching Pen ;
Railroad Pen, Ebony Handle, 5¾ inch ;
1413. Dotting Pen, Ivory “ 3 Wheels ;
Box of Leads ; Each......... $100.00

FINEST

GERMAN DRAWING INSTRUMENTS.

After a very careful examination of the instruments manufactured in Germany we have selected such as we believe will best suit the requirements of those desiring a thoroughly good instrument at a reasonable cost, and the following pages contain a selection equal to any produced to meet this demand.

The instruments of the first grade are perfectly reliable, well made and of excellent materials, being especially suitable for young engineers beginning their profession, or for the professional who does not use his instruments constantly, and also for use in colleges and technical institutes where a good instrument is essential.

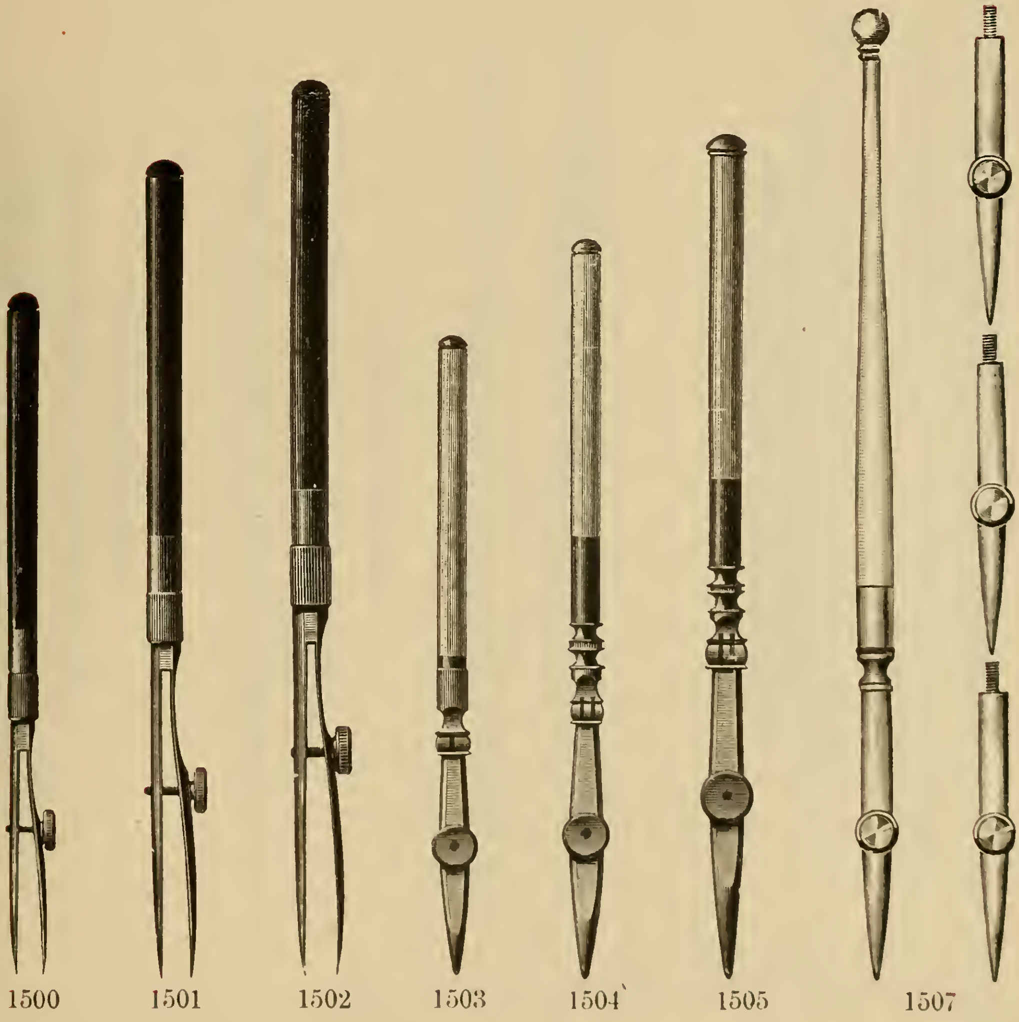
The other grades are designed principally for use in schools and colleges where in many cases they would be of no use to the purchaser after his term expired, and are not recommended for constant use, as we believe that economy lies in the purchase of the best instruments for this purpose.

FINEST

GERMAN DRAWING INSTRUMENTS.

BEST GERMAN SILVER AND ENGLISH STEEL.

Swiss Pattern with Pivot Joint Head.

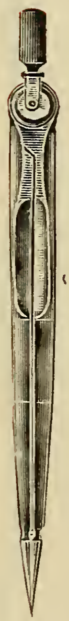


					Each.
1500.	Drawing Pen,	4½	inch,	Spring Blade, Ebony Handle	$0.75
1501.	"	5	"	" "	.85
1502.	"	5½	"	" "	.95
1503.	"	4½	"	Hinge Blade, Ebony or Ivory Handle	1.10
1504.	"	5½	"	" " "	1.20
1505.	"	6	"	" " "	1.30
1506.	Hatching Pen,	6	"	Ebony Handle with 2 Pens in Case	2.00
1507.	"	6	"	" " 4 " "	3.00

FINEST

GERMAN DRAWING INSTRUMENTS.

With Pivot Joint Head.



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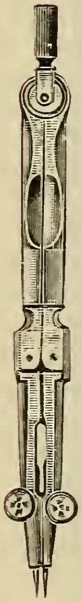

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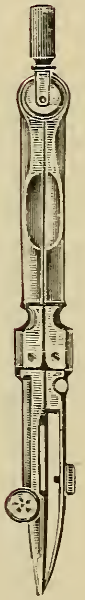

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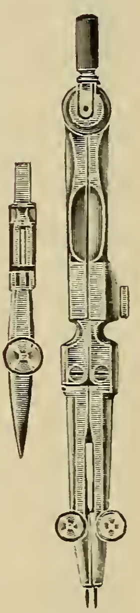

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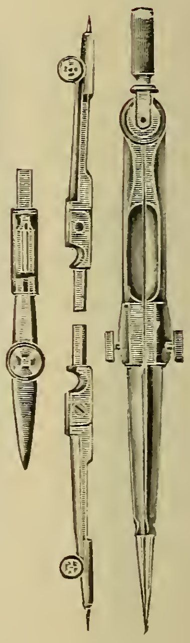


1514

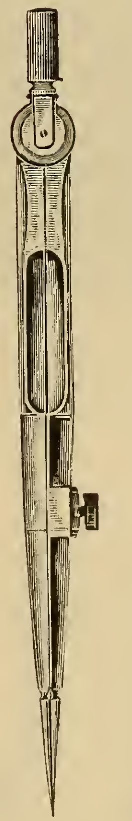
		Each.
1510.	Plain Divider, 3½ inch...	$1.00
1511.	Compass, 3½ inch, with fixed Needle Points..............................	2.75
1512.	“ 3½ “ “ “ and Pen Points..............	2.75
1513.	“ 3½ “ “ “ Point, Pen and Pencil Point,	3.50
1514.	“ 3½ “ with Pen, Pencil and Needle Points........	4.00

FINEST

GERMAN DRAWING INSTRUMENTS.

With Pivot Joint Head.

1515



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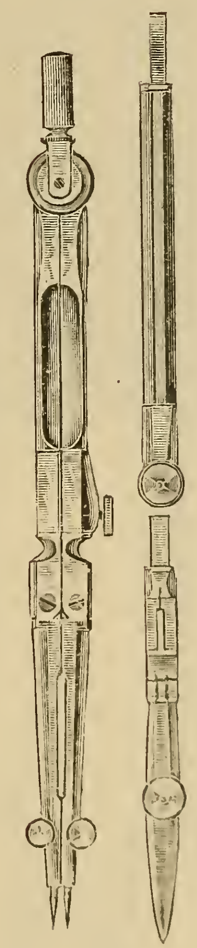
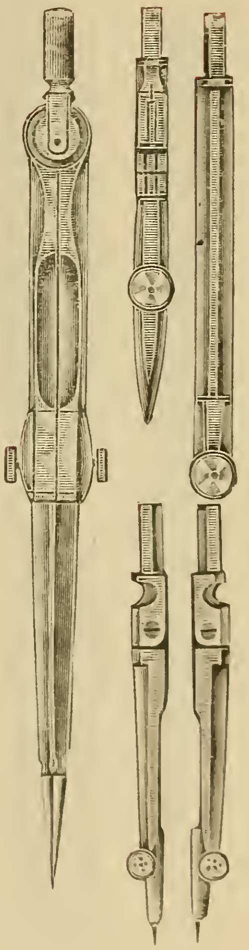


1517



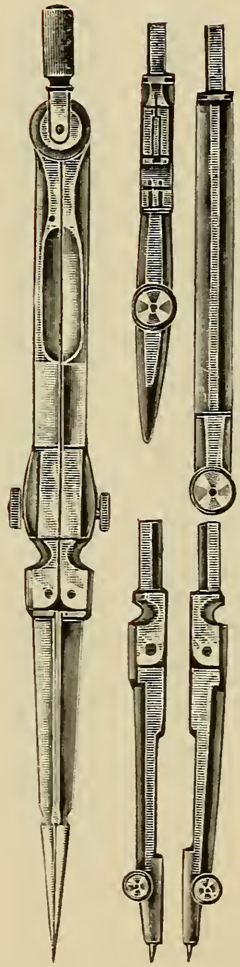
1518

		Each.
1515.	Plain Divider, 4½ inch	$1.25
1516.	Hair Spring Divider, 5 inch	2.50
1517.	Compass, 5½ inch, with fixed Needle Point, Pen, Pencil and Lengthening Bar	4.00
1518.	Compass, 5½ inch, with two Steel Points, Needle Point, Pen, Pencil and Lengthening Bar	5.00

FINEST

GERMAN DRAWING INSTRUMENTS.

With Pivot Joint Head.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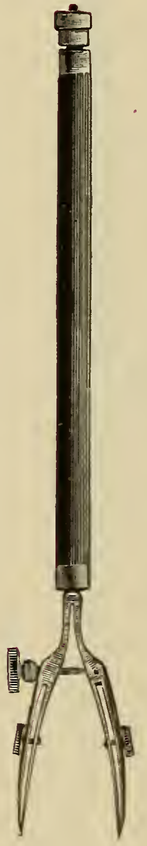
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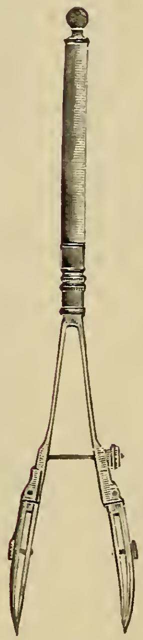
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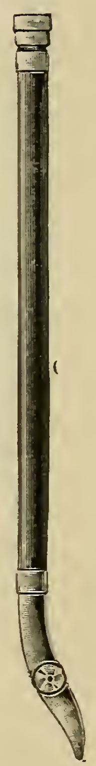
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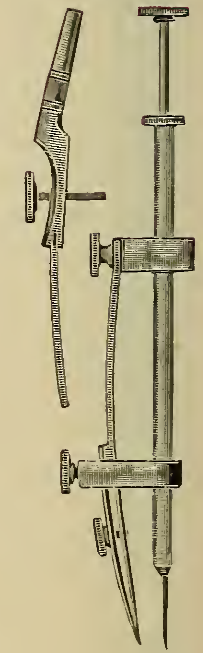
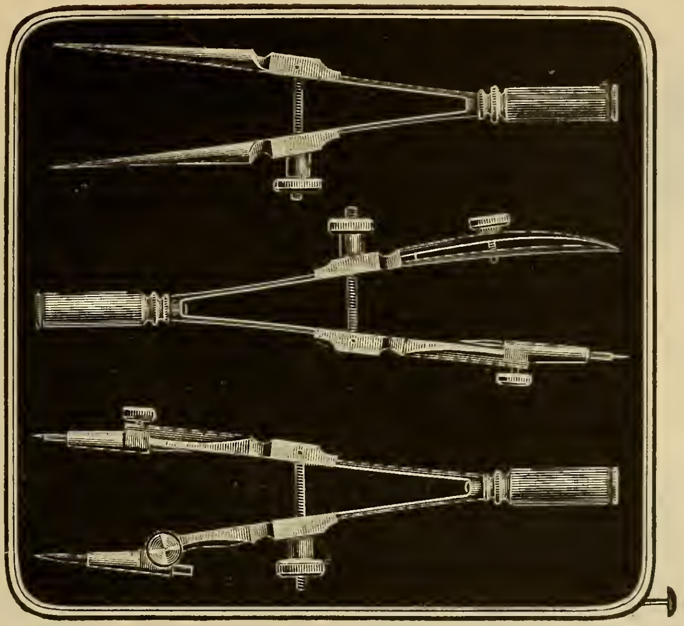

1523

		Each.
1519.	Compass, 5½ inch, same as No. 1518, with Jointed Steel Points.....	$6.00
1520.	Railroad Curve Pen, 5 inch, Ebony Handle..................................	3.00
1521.	" Pen, German Silver, with Joints, Ivory Handle..............	2.75
1522.	Curve Pen, German Silver, Ebony Handle..............................	1.50
1523.	Self-adjusting Spring Bow Pen, with Pencil part........................	3.50

FINEST

GERMAN DRAWING INSTRUMENTS.

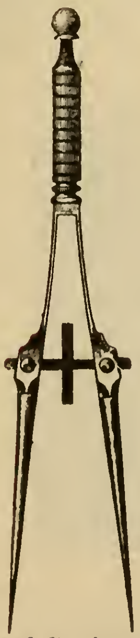
No.



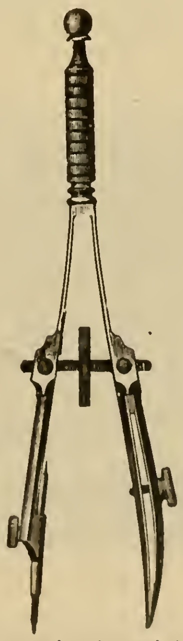
1528

1525.	Steel Spring Bow Divider, 4 inch, German Silver Handle......	each,	$1.25
1526.	" Bow Pen, 4 " " "	"	1.50
1527.	" Bow Pencil, 4 " " "	"	1.50
1528.	Above set in Case as shown...	"	5.00

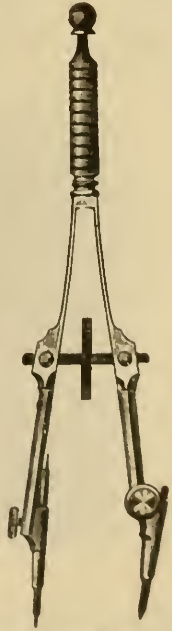
No. 1529



No. 1530



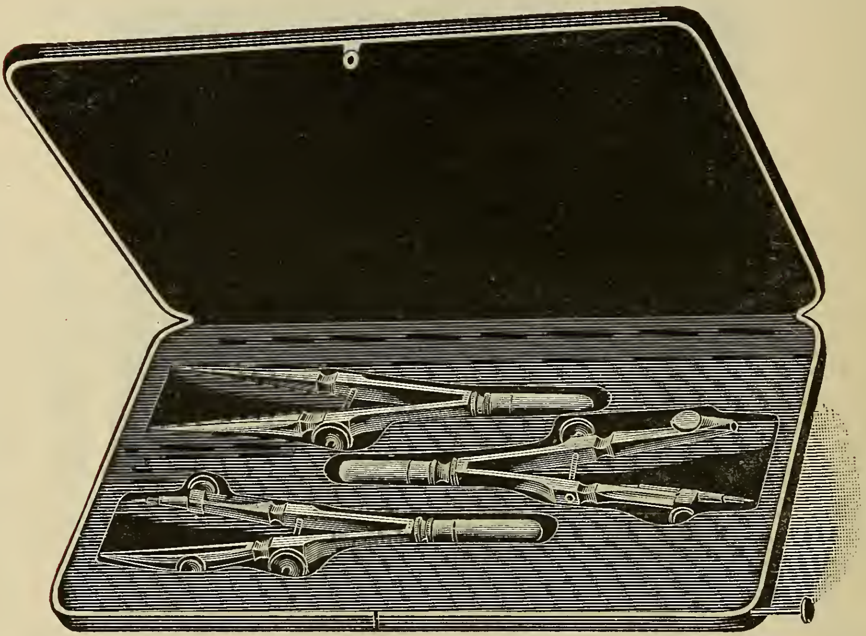
No. 1531



1529.	Steel Spring Bow Divider, 4 inch, with Nut between Shanks....	each	$1.75
1530.	" " Pen, 4 " " " " ...	"	2.00
1531.	" " Pencil, 4 " " " " ...	"	2.00
1532.	Above set in Leather Case		6.50

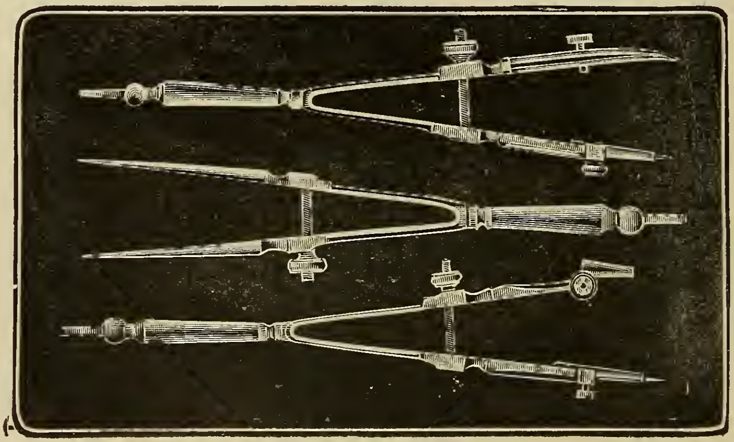
FINEST

GERMAN DRAWING INSTRUMENTS.



1536

		Each.
1533.	Steel Spring Bow Divider, 3½ inch, German Silver Handle............	$1.25
1534.	“ Bow Pen, 3½ “ “ “	1.50
1535.	“ Bow Pencil, 3½ “ “ “	1.50
1536.	Above Set in Leather Case as shown..	5.00

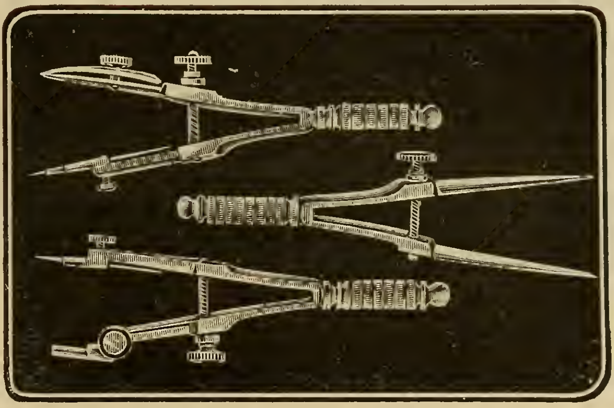


1540

		Each.
1537.	Steel Spring Bow Divider, 3½ inch, Ivory Handle.........................	$1.25
1538.	“ Bow Pen, 3½ “ “	1.50
1539.	“ Bow Pencil, 3½ “ “	1.50
1540.	Above Set in Leather Case as shown..	5.00

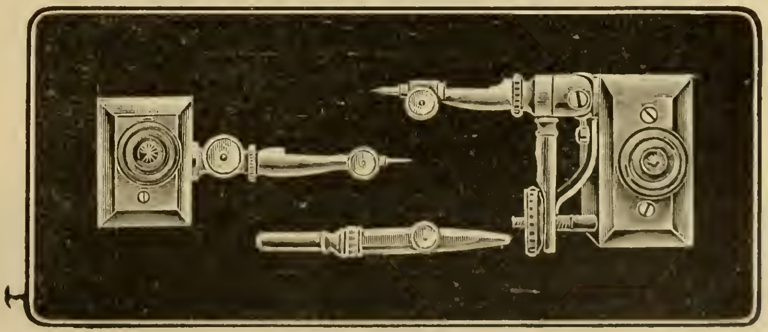
FINEST

GERMAN DRAWING INSTRUMENTS.



1544

		Each.
1541.	Steel Spring Bow Divider, 2½ inch, German Silver Handle..........	$1.50
1542.	“ Bow Pen, 2½ “ “ “	1.80
1543.	“ Bow Pencil, 2½ “ “ “	1.80
1544.	Above Set in Leather Case as shown..	5.75



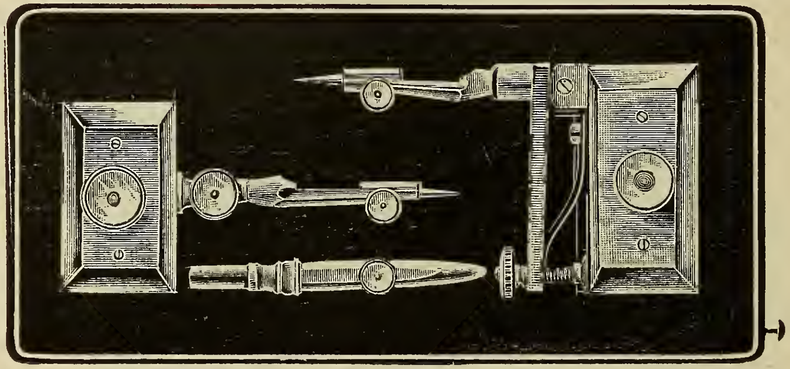
1545

		Each.
1545.	Beam Compass, with Pen, Pencil and Needle Point, and Micrometer Adjustment in Leather Case..	$5.80

SEE PAGE 174 FOR BEAM COMPASS BARS.

FINEST

GERMAN DRAWING INSTRUMENTS.



1546

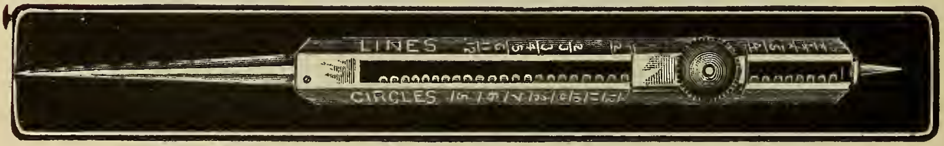
Each.

1546. Beam Compass with Pen, Pencil and Needle Point, and Micrometer Adjustment in Leather Case.................................... ....$ 6.20

1547

Each.

1547. Proportional Divider, 7 inch, for lines and circles, in Leather Case ....$ 8.00



1548

Each.

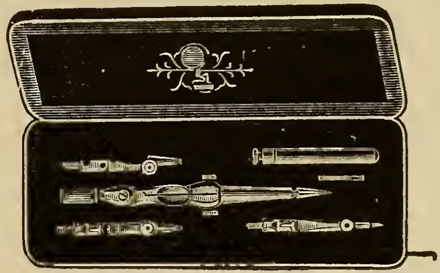
1548. Proportional Divider, 7 inch, for lines and circles, with Rack Movement, in Leather Case..$11.50

SEE PAGE 174 FOR BEAM COMPASS BARS.

FINEST

GERMAN DRAWING INSTRUMENTS.

IN MOROCCO CASES LINED WITH VELVET.



1550

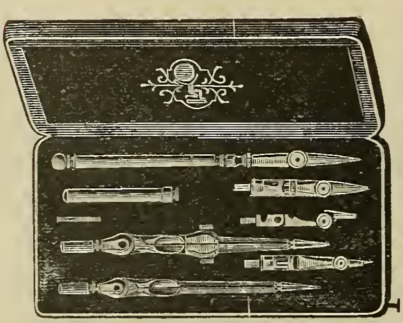
No. 1550 contg.: Compass, 3½ inch, Swiss Pattern, with two Steel Points, Pen,
Pencil and Needle Point ;
Box of Leads ;
Each.. $ 3.75

1551

No. 1551 contg.: Compass, 3½ inch, Swiss Pattern, with two Steel Points, Pen,
Pencil and Needle Point ;
Drawing Pen, 4½ inch, Hinge Blade, Ivory Handle ;
Box of Leads ;
Each.. $ 4.25

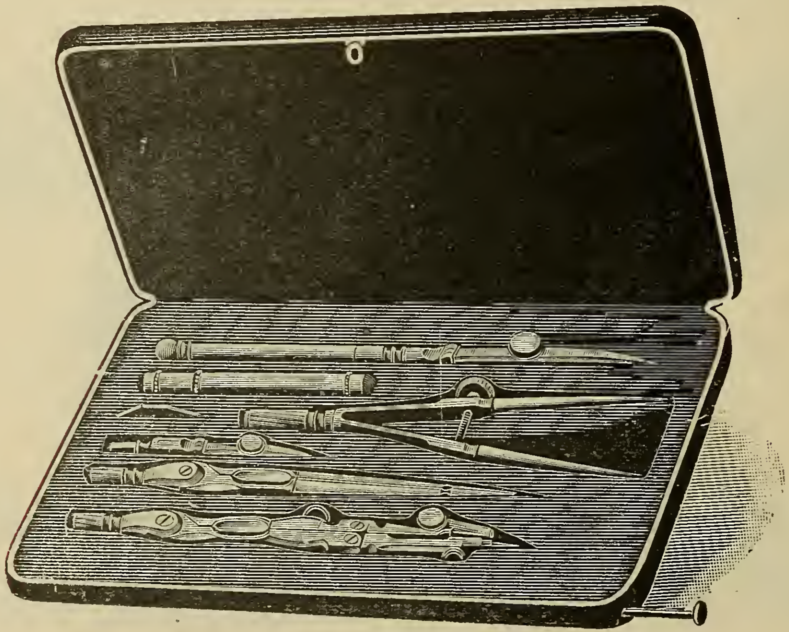
FINEST

GERMAN DRAWING INSTRUMENTS.



1552

No. 1552 contg.: Plain Divider, 3½ inch ;
Compass, 3½ inch, with two Steel Points, Pen, Pencil and Needle Point ;
Drawing Pen, 4½ inch, Hinge Blade, Ivory Handle ;
Box of Leads ;
Each.. $ 4.75



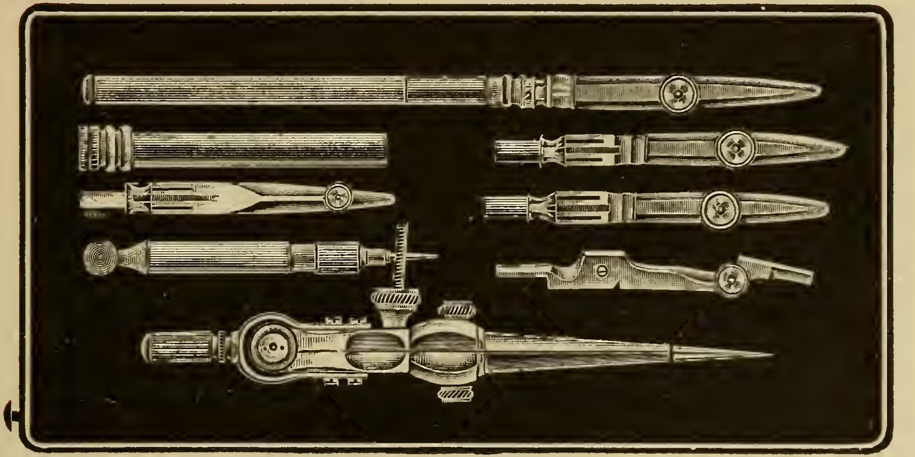
1553

No. 1553 contg.: Plain Divider, 3½ inch ;
Compass, 3½ inch, with fixed Needle Point, Pen and Pencil parts;
Steel Spring Bow Divider, 3½ inch, German Silver Handle ;
Drawing Pen, 4½ inch, Hinge Blade, Ivory Handle ;
Box of Leads ;
Each.. $ 5,50

FINEST

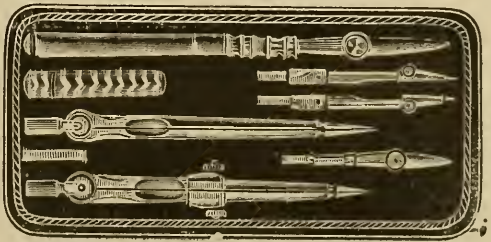
GERMAN DRAWING INSTRUMENTS.

With Pivot Joint Head.



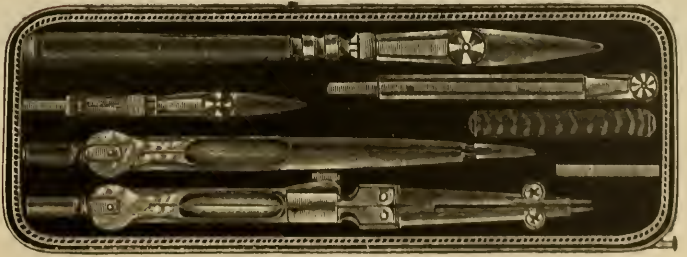
1554

No. 1554 contg.: Spring Bow Compass, long Ivory Handle, two Steel Points,
two Pen Points, Pencil and Needle Point;
Drawing Pen, 4½ inch, Hinge Blade, Ivory Handle ;
Compass may be used as a Railroad Pen. Each......................... $ 7.50



1555

No. 1555 contg.: No. 1514. Compass, 3½ inch, with two Steel Points, Pen, Pencil and Needle Point ;
1510. Plain Divider, 3½ inch ;
1504. Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle;
Box of Leads; Each......................... $ 7.00



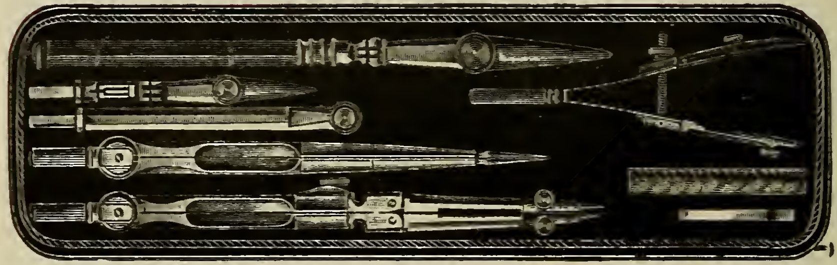
1556

No. 1556 contg.: No. 1517. Compass, 5½ inch, with fixed Needle Point, Pen, Pencil and Lengthening Bar ;
1515. Plain Divider, 4½ inch ;
1504. Drawing Pen, 5½ inch, Hinge Blade, Ebony or Ivory Handle;
Box of Leads ; Each......................... $ 7.75

FINEST

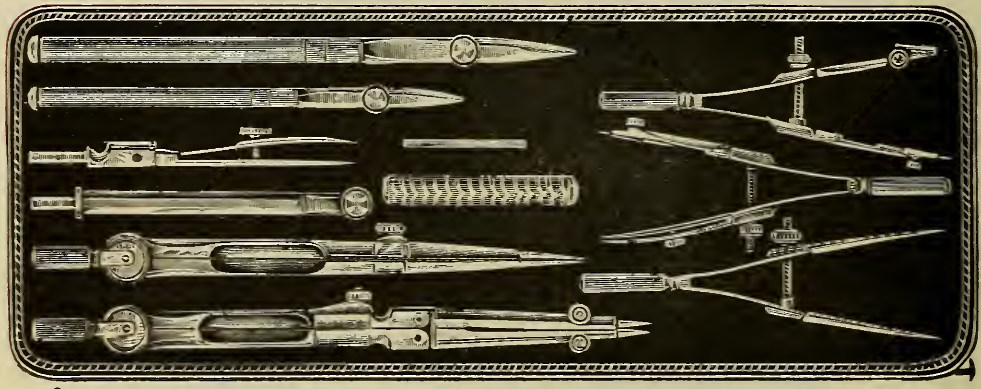
GERMAN DRAWING INSTRUMENTS.

With Pivot Joint Head.



1557

No. 1557 contg.: No. 1517. Compass, 5½ inch, with fixed Needle Point, Pen, Pencil and Lengthening Bar;
1515. Plain Divider, 4½ inch;
1526. Steel Spring Bow Pen, 4 inch, German Silver Handle;
1504. Drawing Pen, 5½ inch, Hinge Blade, Ebony or Ivory Handle;
Box of Leads;
Each.................................... .... $ 9.00

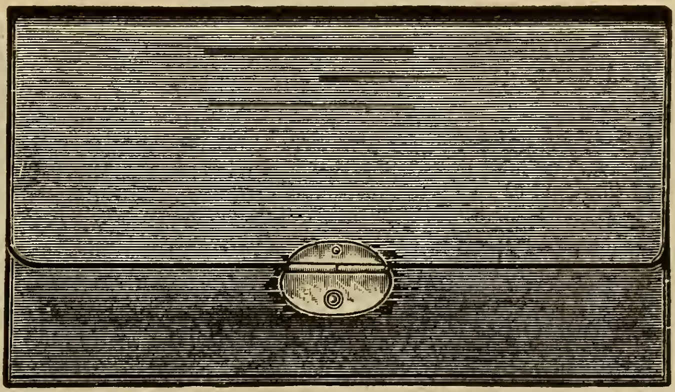


1558

No. 1558 contg.: No. 1517. Compass, 5½ inch, with fixed Needle Point, Pen, Pencil and Lengthening Bar;
1516. Hair Spring Divider, 5 inch;
1525. Steel Spring Bow Divider, 4 inch, German Silver Handle;
1526. " " " Pen, 4 " " " "
1527. " " " Pencil, 4 " " " "
1501. Drawing Pen, 5 inch, Spring Blade, Ebony Handle;
1500. " " 4½ " " " " "
Box of Leads;
Each.. .... $ 14.50

FINEST
GERMAN DRAWING INSTRUMENTS.
With Pivot Joint Head.

The following set is furnished in our "New Pocket Book" case and will be found to contain a very compact and convenient arrangement of instruments.



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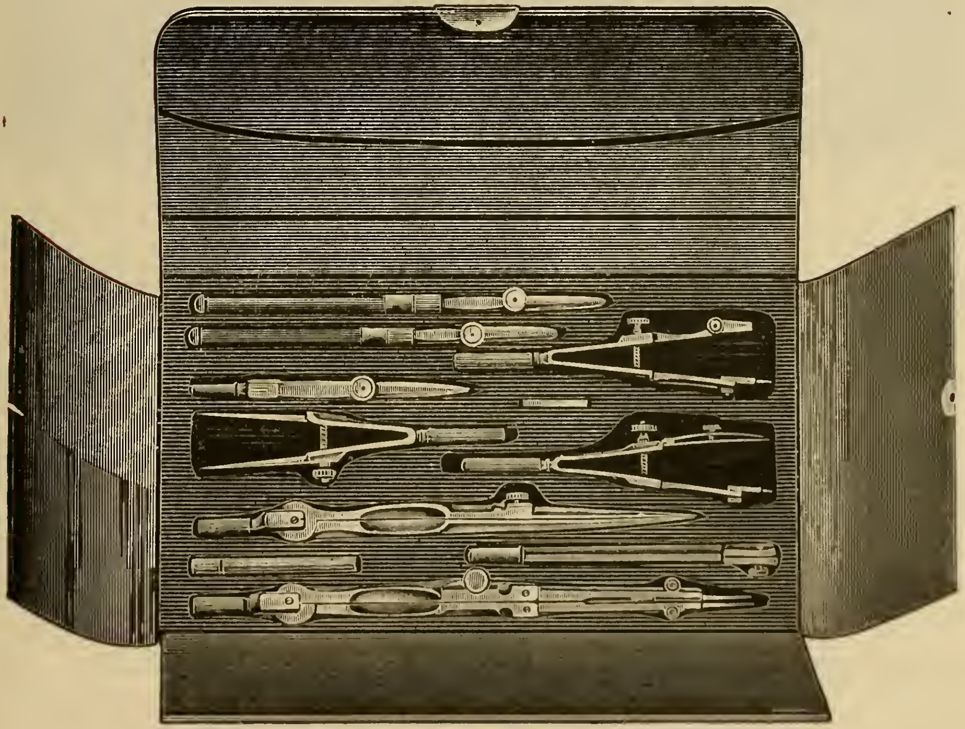


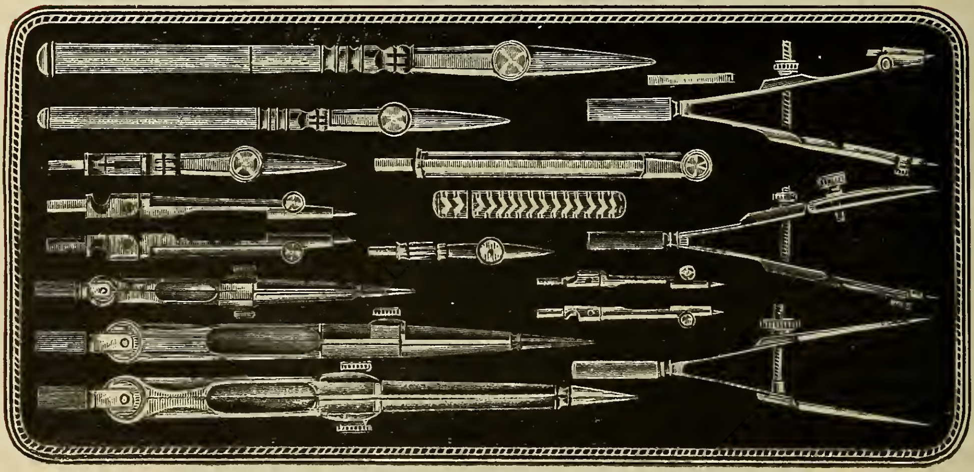
1559

No. 1559 contg.: No. 1517. Compass, 5½ inch, with fixed Needle Point, Pen, Pencil and Lengthening Bar;
1516. Hair Spring Divider, 5 inch ;
1525. Steel " Bow Divider, 4 inch, German Silver Handle;
1526. " " " Pen, 4 " " " "
1527. " " " Pencil, 4 " " " "
1501. Drawing Pen, 5 inch, Spring Blade, Ebony Handle;
1500. " " 4½ " " " "
Box of Leads ; Each........................ $ 16.00

FINEST

GERMAN DRAWING INSTRUMENTS.

With Pivot Joint Head.



1560

No. 1560 contg.: No. 1518. Compass, 5½ inch, with two Steel Points, Pen, Pencil and Needle Point, and Lengthening Bar;

1514. Compass, 3½ inch, with two Steel Points, Pen, Pencil and Needle Point;

1516. Hair Spring Divider, 5 inch;

1525. Steel Spring Bow Divider, 4 inch, German Silver Handle;

1526. Steel Spring Bow Pen, 4 inch, German Silver Handle;

1527. Steel Spring Bow Pencil, 4 inch, German Silver Handle;

1501. Drawing Pen, 5 inch, Spring Blade, Ebony or Ivory Handle;

1500. Drawing Pen, 4½ inch, Spring Blade, Ebony or Ivory Handle;

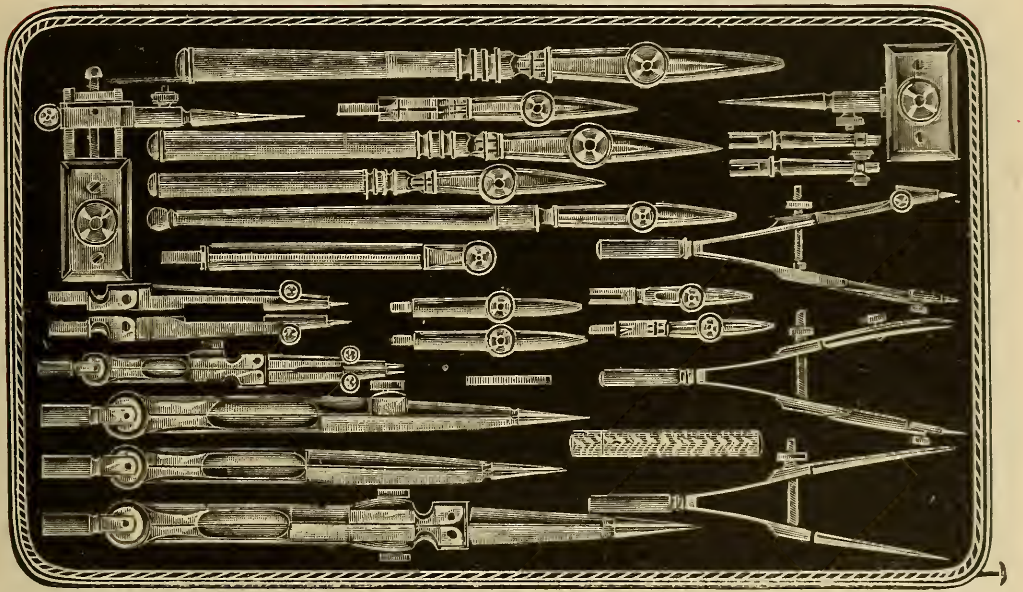
Box of Leads;

Each	$ 19.50

FINEST

GERMAN DRAWING INSTRUMENTS.

With Pivot Joint Head.



1561

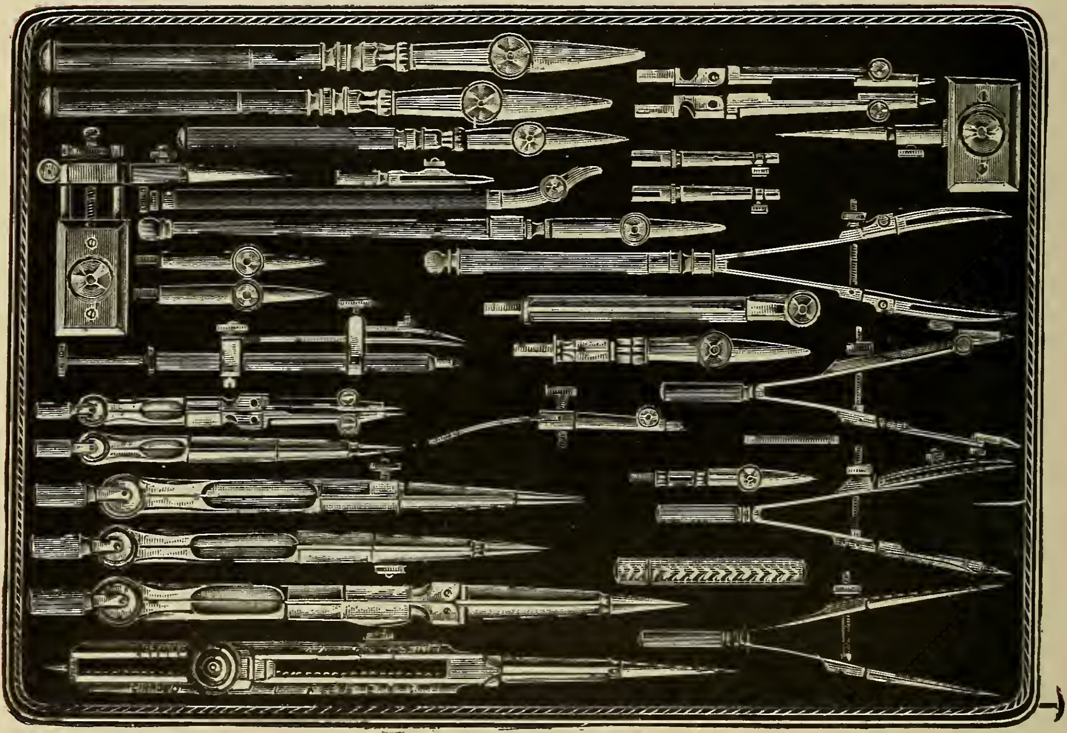
No. 1561 contg.: No. 1519. Compass, 5½ inch, with jointed Steel Points, Pen, Pencil and Needle Point, and Lengthening Bar;
1513. Compass, 3½ inch, with fixed Needle Point, Pen and Pencil Point;
1515. Plain Divider, 5 inch;
1516. Hair Spring Divider, 5 inch;
Beam Compass, with two Steel Points, Pen, Pencil and Needle Points, Micrometer Adjustment;
1525. Steel Spring Bow Divider, 4 inch, German Silver Handle;
1526. " Bow Pen, 4 " " "
1527. " Bow Pencil, 4 " " "
1500. Drawing Pen, 4½ inch, Spring Blade, Ebony or Ivory Handle;
1501. Drawing Pen, 5 inch, Spring Blade, Ebony or Ivory Handle;
1502. Drawing Pen, 5½ inch, Spring Blade, Ebony or Ivory Handle;
1506. Hatching Pen, 6 inch, Ebony Handle, with 2 Pens;
Box of Leads;

Each.. $32.00

FINEST

GERMAN DRAWING INSTRUMENTS.

With Pivot Joint Head.



1562

No. 1562 contg.:

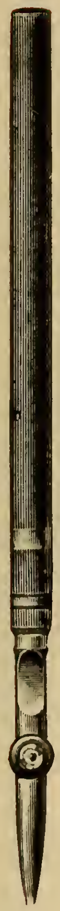
No. 1519.	Compass, 5½ inch, with jointed Steel Points, Pen, Pencil and Needle Point, and Lengthening Bar;
1513.	Compass, 3½ inch, with fixed Needle Point, Pen and Pencil Point;
1515.	Plain Divider, 4½ inch;
1510.	" 3½ "
1516.	Hair Spring Divider, 5 inch;
1547.	Proportional Divider, 7 inch, for Lines and Circles;
1525.	Steel Spring Bow Divider, 4 inch, German Silver Handle;
1526.	" Bow Pen, 4 " " "
1527.	" Bow Pencil, 4 " " "
1523.	Adjustable Bow Pen, with Pencil part;
1521.	Railroad Pen, with Joints;
1522.	Curve Pen, German Silver;
1500.	Drawing Pen, 4½ inch, Spring Blade, Ebon, or Ivory Handle;
1501.	" 5 " " " "
1502.	" 5½ " " " "
	Beam Compass, with two Steel Points, Pen, Pencil and Needle Point, Micrometer Adjustment;
1506.	Hatching Pen, 6 inch, Ebony Handle, 2 Pens;
	Box of Leads;

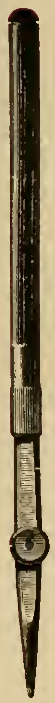
Each.. $51.00

FINE

GERMAN DRAWING INSTRUMENTS.

OF GERMAN SILVER WITH STEEL POINTS.


1600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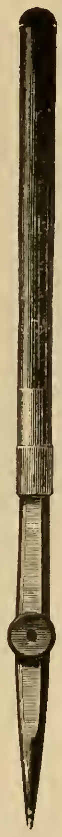
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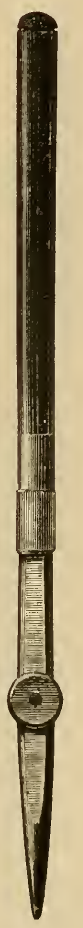
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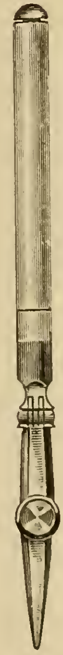
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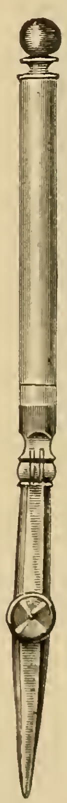
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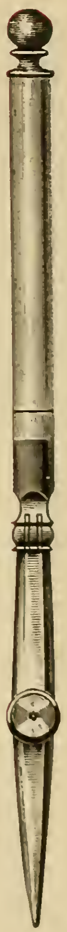
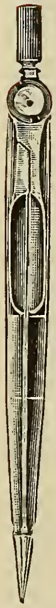

1606

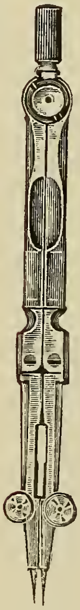
			Each.
1600.	Drawing Pen, Spring Blade, Ebony Handle,	5½ inch	$0.50
1601.	“ Plain “ “	4½ “	.45
1602.	“ “ “ “	5 “	.50
1603.	“ “ “ “	5½ “	.55
1604.	“ Hinge Joint, Ivory Handle,	4 “	.70
1605.	“ “ “	4¾ “	.80
1606.	“ “ “	5½ “	.90

FINE

GERMAN DRAWING INSTRUMENTS.



1607



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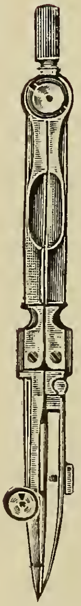

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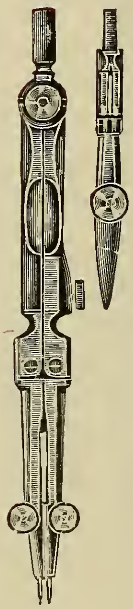

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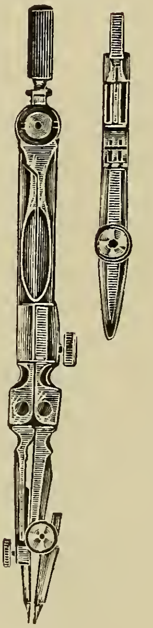

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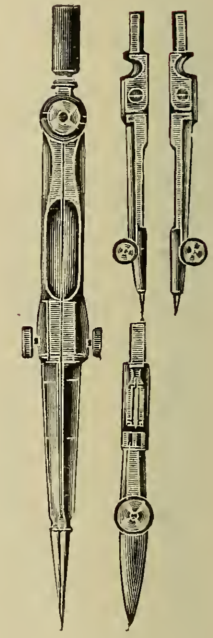
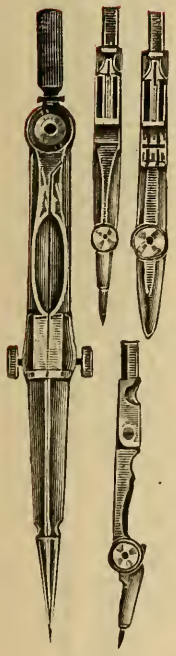


1612

		Each
1607.	Plain Divider, 3½ inch..	$0.80
1608.	Compass, 3½ inch, with fixed Needle and Pencil Points..............	2.15
1609.	" 3½ " " " " Pen "	2.15
1610.	" 3½ " " " Point, Pen and Pencil parts,	2.50
1611.	" 3½ " Swiss Pattern, with fixed Needle Point, Pen and Pencil parts..	2.50
1612.	Compass, 3½ inch, with 2 Steel Points, Pen, Pencil and Needle Point..	2.75

FINE

GERMAN DRAWING INSTRUMENTS.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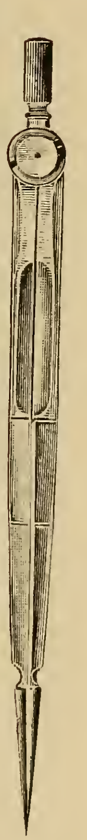
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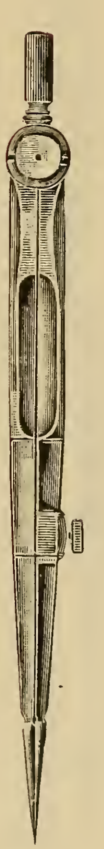
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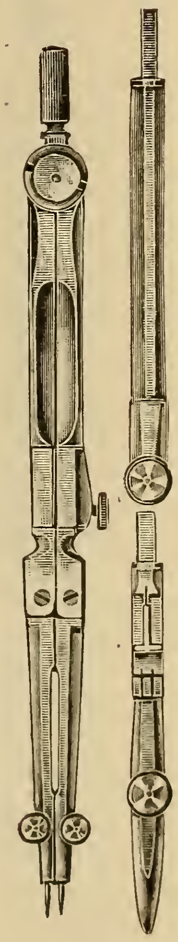
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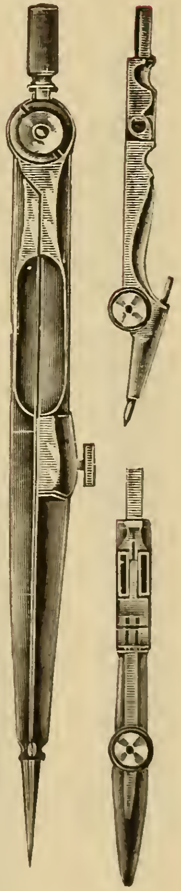
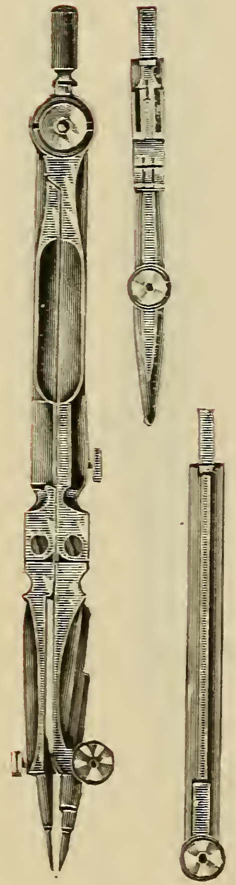

1617

		Each.
1613.	Compass, 3½ inch, Swiss Pattern, with 2 Steel Points, Pen, Pencil and Needle Points	$2.75
1614.	Plain Divider, 5 inch	1 00
1615.	Hair Spring Divider, 5 inch	2.25
1616.	Compass, 5½ inch, with fixed Needle Point, Pen, Pencil, and Lengthening Bar	2.50
1617.	Compass, 5½ inch, Swiss Pattern, with Pen and Pencil parts	2.00

FINE

GERMAN DRAWING INSTRUMENTS.



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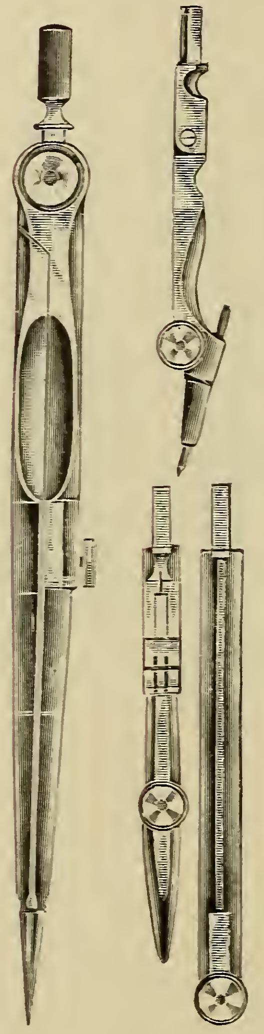

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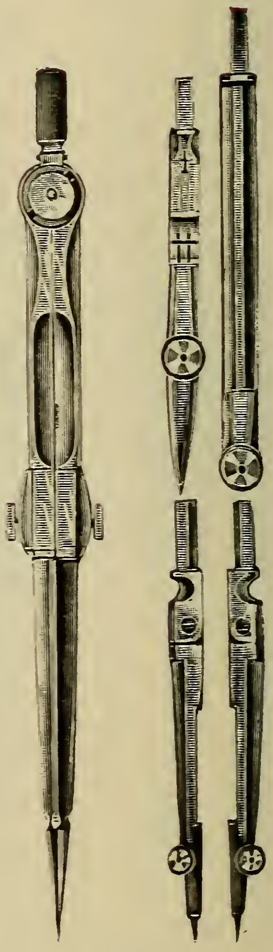
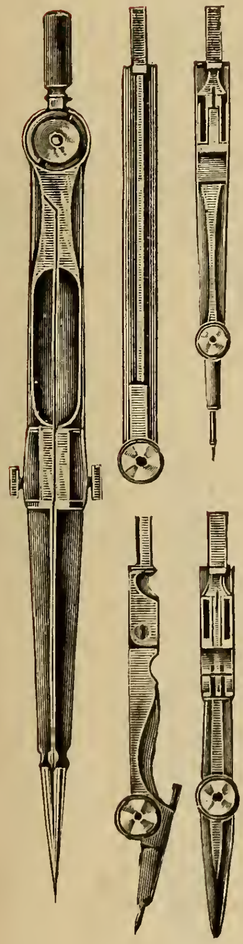


1620

		Each.
1618.	Compass, 5½ inch, Swiss Pattern, with fixed Needle Point, Pen, Pencil and Lengthening Bar	$2.50
1619.	Compass, 5½ inch, Swiss Pattern, with Pen, Pencil and Lengthening Bar	2.25
1620.	Compass, 5½ inch, with 2 Steel Points, Needle Point, Pen, Pencil and Lengthening Bar	3.25

FINE

GERMAN DRAWING INSTRUMENTS.



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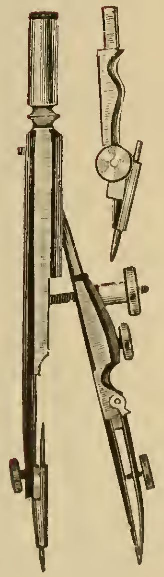

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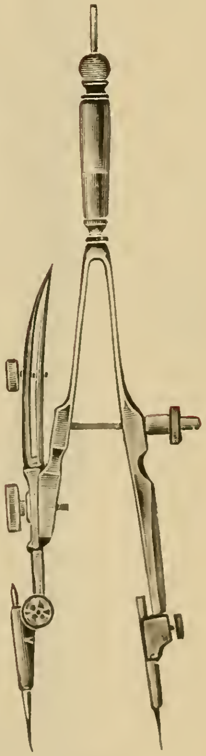
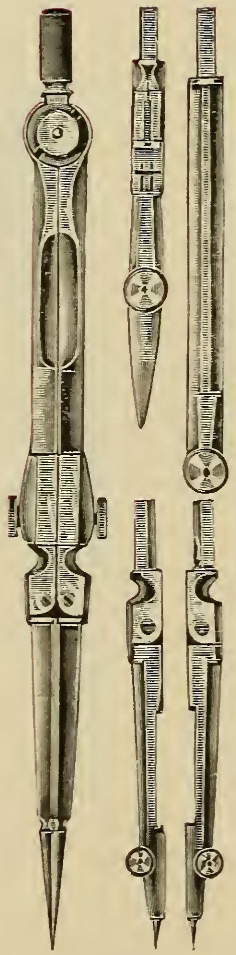


1623

		Each.
1621.	Compass, 5½ inch, Swiss Pattern, with 2 Steel Points, Needle Point, Pen, Pencil and Lengthening Bar	$3.25
1622.	Bow Pen, German Silver, with Pencil part, 3½ inch	3.30
1623.	" Reversible, Pen and Pencil, 4 inch	3.50

FINE

GERMAN DRAWING INSTRUMENTS.



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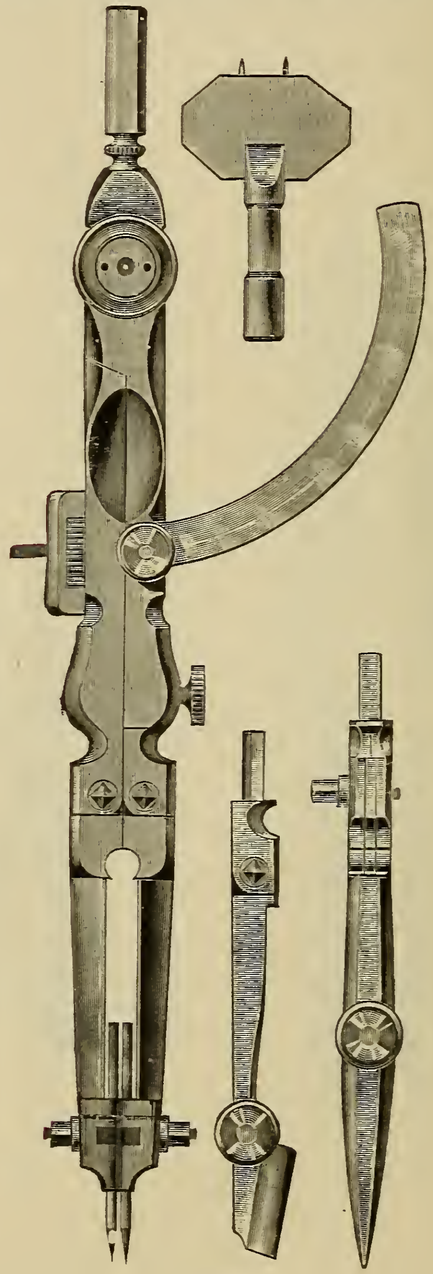
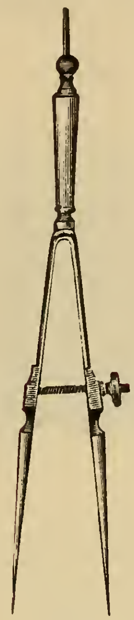


1625

		Each.
1624.	Compass, 5½ inch, with jointed Steel Points, Needle Point, Pen, Pencil and Lengthening Bar	$ 4.90
1625.	Lithographer's Compass, 7 inch, with two Steel Points, Pen and Pencil Points, Wrench and Micrometer Adjustment for regulating spaces, very strong	12.50

FINE
GERMAN DRAWING INSTRUMENTS.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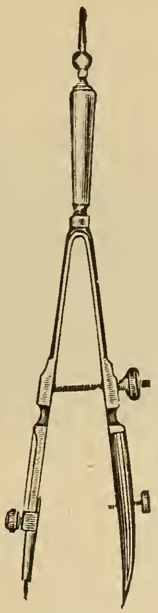
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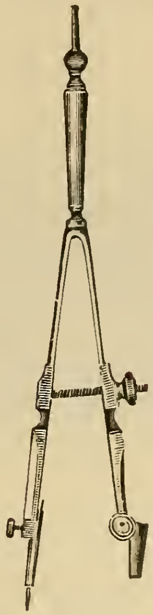
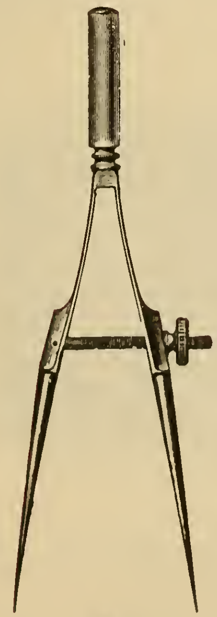

1628

1626.	Steel Spring Bow Dividers, Ivory Handle,	3½	inch	each,	$ 1.00
1627.	" " " Pen, " "	3½	"	"	1.25
1628.	" " " Pencil, " "	3½	"	"	1.25
1629.	Above Set in Case				4.25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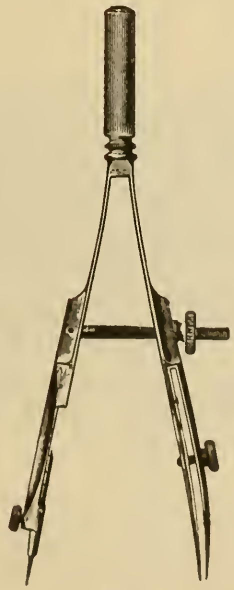
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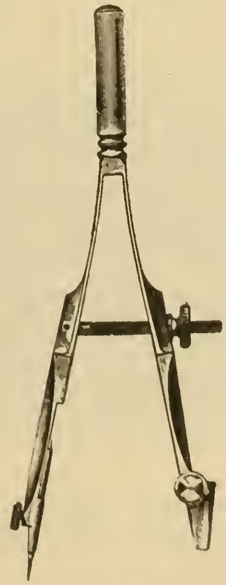
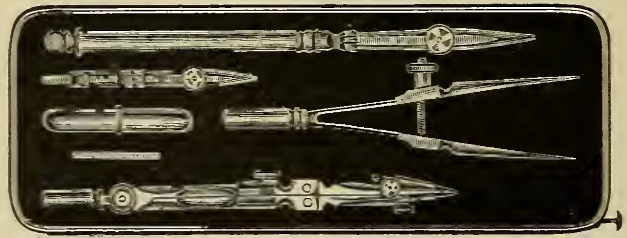

1632

1630.	Steel Spring Bow Dividers, German Silver Handle,	4	inch	each,	$ 1.00
1631.	" " " Pen, " " "	4	"	"	1.25
1632.	" " " Pencil, " " "	4	"	"	1.25
1633.	Above Set in Case				4.25

FINE

GERMAN DRAWING INSTRUMENTS.

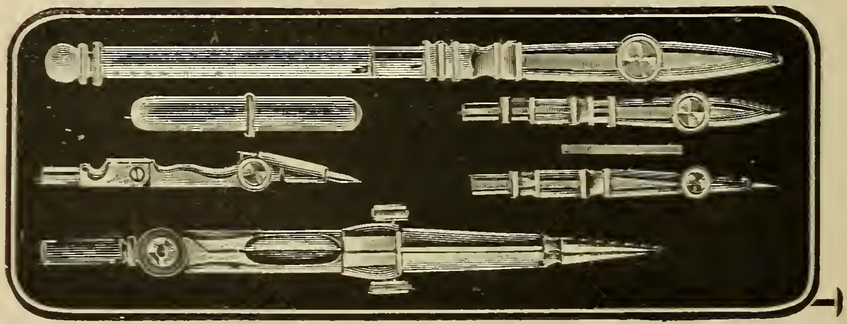
In Morocco Cases, Lined with Velvet.



1650

No. 1650 contg.: No. 1611. Compass, 3½ inch, with fixed Needle Point, Pen and Pencil parts ;
1605. Drawing Pen, 4¾ inch, Hinge Blade, Ivory Handle;
1630. Steel Spring Bow Dividers, 4 inch, German Silver Handle ;
Box of Leads :

Each $4.75



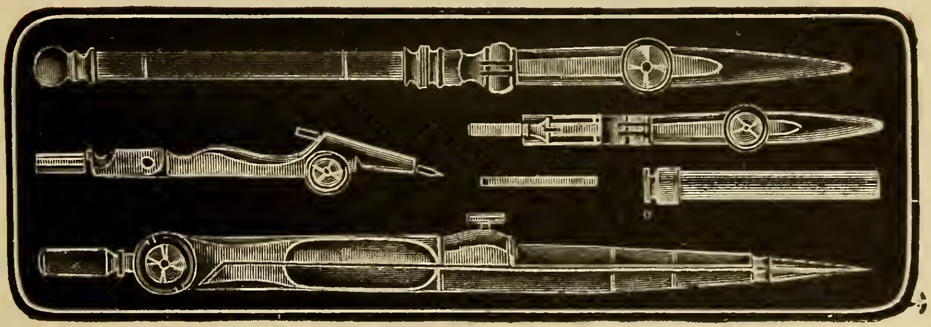
1651

No. 1651 contg.: No. 1613. Compass, 3½ inch, with 2 Steel Points, Pen, Pencil and Needle Point ;
1605. Drawing Pen, 4¾ inch, Hinge Blade, Ivory Handle ;
Box of Leads ;

Each $4.50

FINE

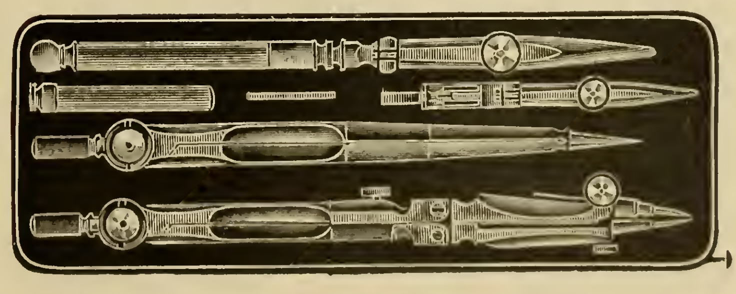
GERMAN DRAWING INSTRUMENTS.



1652

No. 1652 contg.: No. 1617. Compass, 5½ inch, with Pen and Pencil parts;
1606. Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle;
Box of Leads;

Each.. .... $3.75



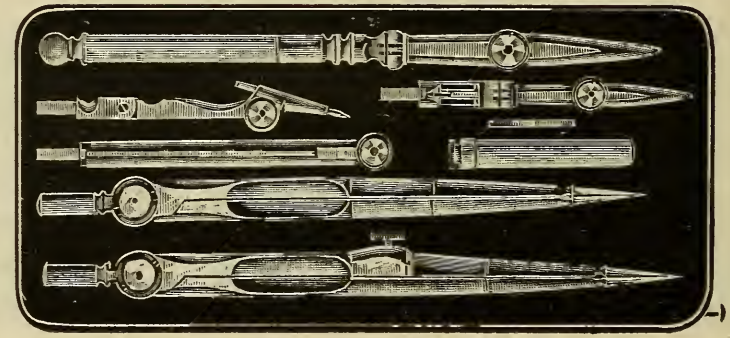
1653

No. 1653 contg.: No. 1614. Plain Divider, 5 inch;
1617. Compass, 5½ inch, with fixed Needle Point, Pen and Pencil parts;
1606. Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle;
Box of Leads;

Each.. $4.75

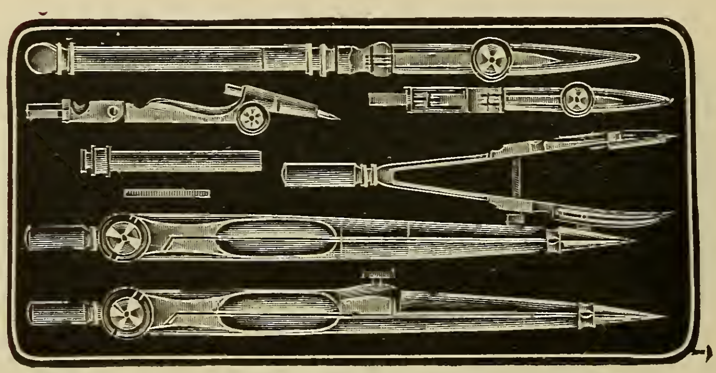
FINE

GERMAN DRAWING INSTRUMENTS.



1654

No. 1654 contg.: No. 1614. Plain Divider, 5 inch ;
1619. Compass, 5½ inch, with Pen, Pencil and Lengthening Bar ;
1606. Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle;
Box of Leads ;
Each.. $5.00

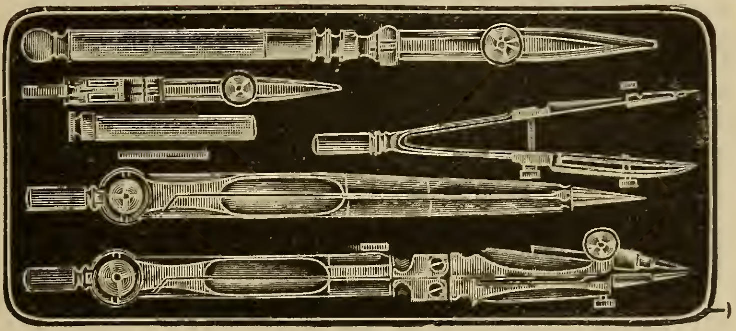


1655

No. 1655 contg.: No. 1614. Plain Divider, 5 inch ;
1617. Compass, 5½ inch, with Pen and Pencil parts ;
1606. Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle ;
1631. Steel Spring Bow Pen, 4 inch, German Silver Handle ;
Box of Leads ;
Each.. $6.25

FINE

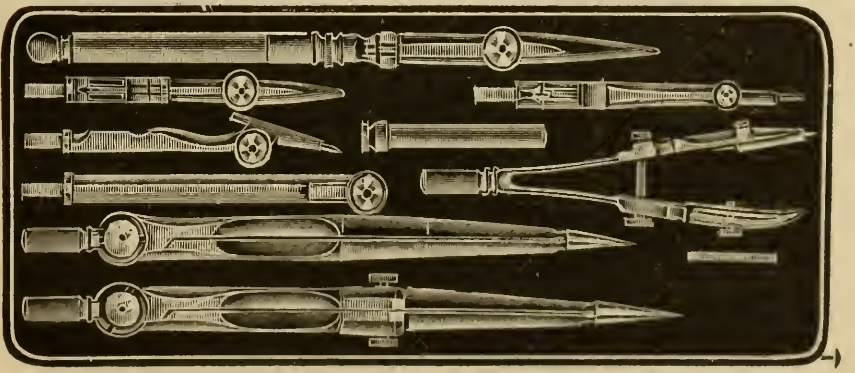
GERMAN DRAWING INSTRUMENTS.



1656

No. 1656 contg.: No. 1614. Plain Divider, 5 inch ;
1618. Compass, 5½ inch, with fixed Needle Point, Pen and Pencil parts ;
1606. Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle ;
1631. Steel Spring Bow Pen, 4 inch, German Silver Handle ;
Box of Leads ;
Each.. $6.25

No. 1657 contg.: Same as above, with addition of Lengthening Bar for Compass No. 1618 ;
Each.. $6.50

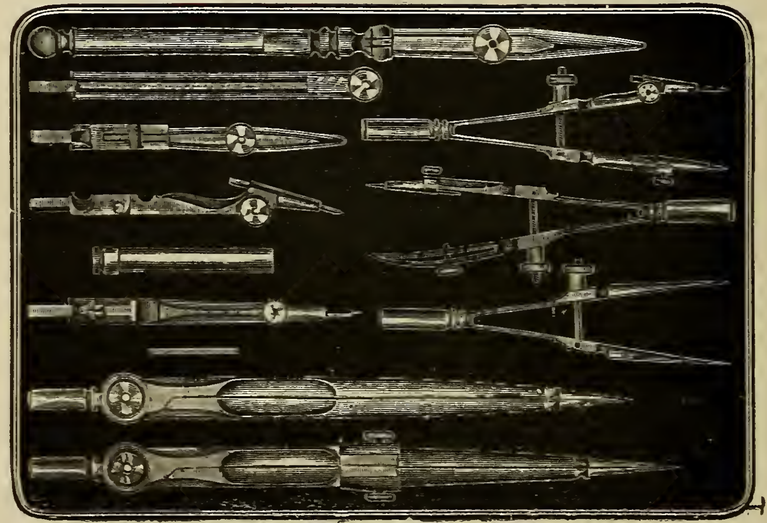


1658

No. 1658 contg.: No. 1614. Plain Divider, 5 inch ;
1621. Compass, 5½ inch, with 2 Steel Points, Pen, Pencil and Needle Points, and Lengthening Bar ;
1606. Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle ;
1631. Steel Spring Bow Pen, 4 inch, German Silver Handle ;
Box of Leads ;
Each.. $6.75

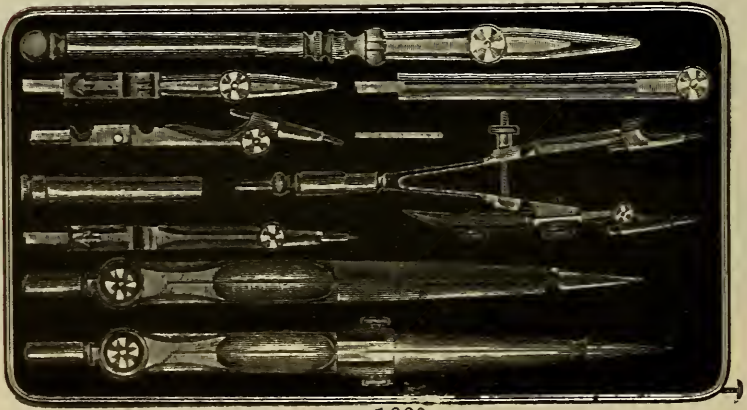
FINE

GERMAN DRAWING INSTRUMENTS.



1659

No. 1659 contg.: No. 1614. Plain Divider, 5 inch ;
1621. Compass, 5½ inch, with 2 Steel Points, Pen, Pencil and Needle Points, and Lengthening Bar ;
1606. Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle;
1630. Steel Spring Bow Divider, 4 inch, German Silver Handle ;
1631. " Bow Pen, 4 " " "
1632. " Bow Pencil, 4 " " "
Box of Leads ;
Each.. .. .. $9.75

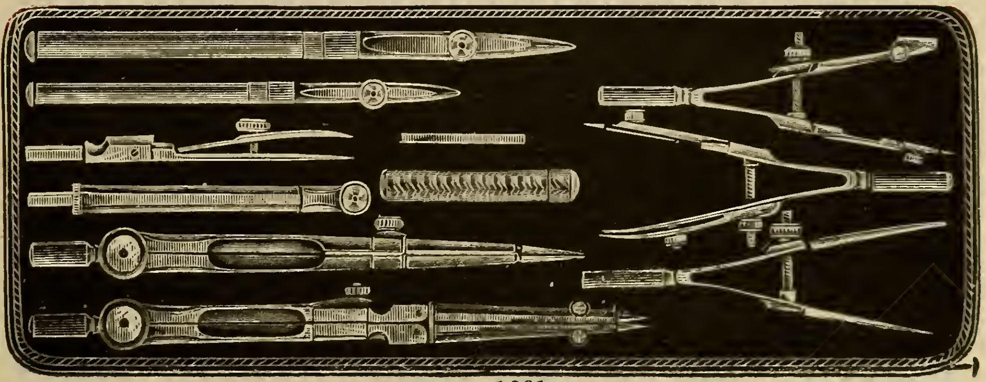


1660

No. 1660. contg.: No. 1614. Plain Divider, 5 inch ;
1621. Compass, 5½ inch, with 2 Steel Points, Pen, Pencil and Needle Points, and Lengthening Bar ;
1606. Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle;
1623. Steel Spring Bow Pen and Pencil combined, 4 inch, Ivory Handle ; Box of Leads ;
Each.. $10.00

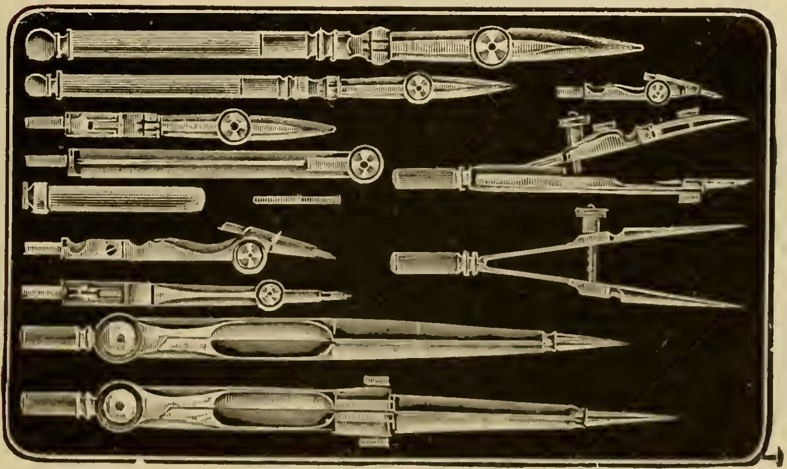
FINE

GERMAN DRAWING INSTRUMENTS.



1661

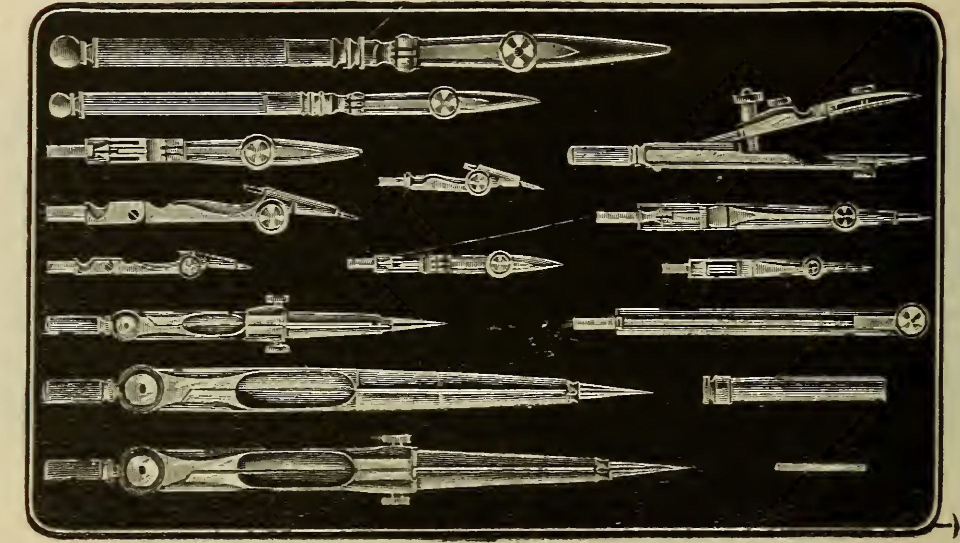
No. 1661 contg.: No. 1616. Compass, 5½ inch, with fixed Needle Point, Pen, Pencil and Lengthening Bar ;
1615. Hair Spring Divider, 5 inch ;
1630. Steel Spring Bow Divider, 4 inch, German Silver Handle ;
1631. " Bow Pen, 4 " " "
1632. " Bow Pencil, 4 " " "
1606. Drawing Pen, 5 inch, Hinge Blade, Ivory Handle ;
1604. " 4 " " "
Box of Leads ;
Each.. $11.00



1662

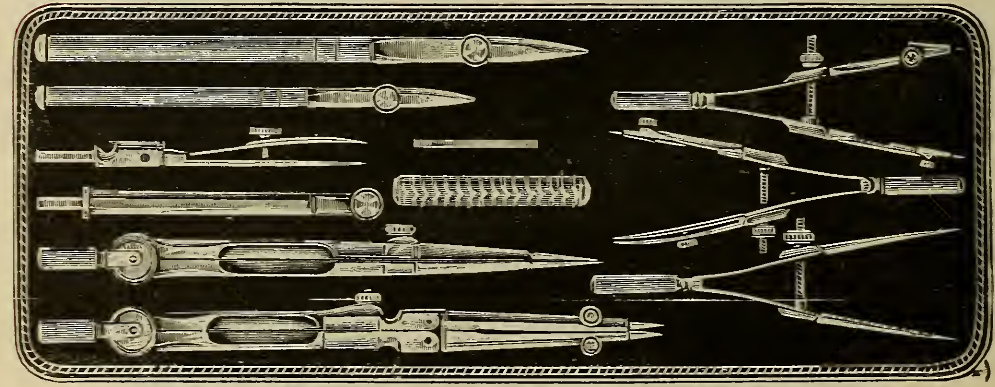
No. 1662 contg.: No. 1614. Plain Divider, 5 inch ;
1621. Compass, 5½ inch, with 2 Steel Points, Pen, Pencil and Needle Points, and Lengthening Bar ;
1606. Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle;
1605. " 4¾ " " "
1630. Steel Spring Bow Divider, 4 inch, German Silver Handle;
1622. Bow Pen, 3½ inch, with Pen and Pencil parts ;
Box of Leads ;
Each.. $11.25

FINE
GERMAN DRAWING INSTRUMENTS.



1663

No. 1663 contg.: No. 1614. Plain Divider, 5 inch;
1621. Compass, 5½ inch, with 2 Steel Points, Pen, Pencil and Needle Points, and Lengthening Bar;
1613. Compass, 3½ inch, with 2 Steel Points, Pen, Pencil and Needle Points;
1606. Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle;
1605. " 4¾ " " "
1622. Bow Pen, 4 inch, with Pen and Pencil parts;
Box of Leads;
Each $13.00

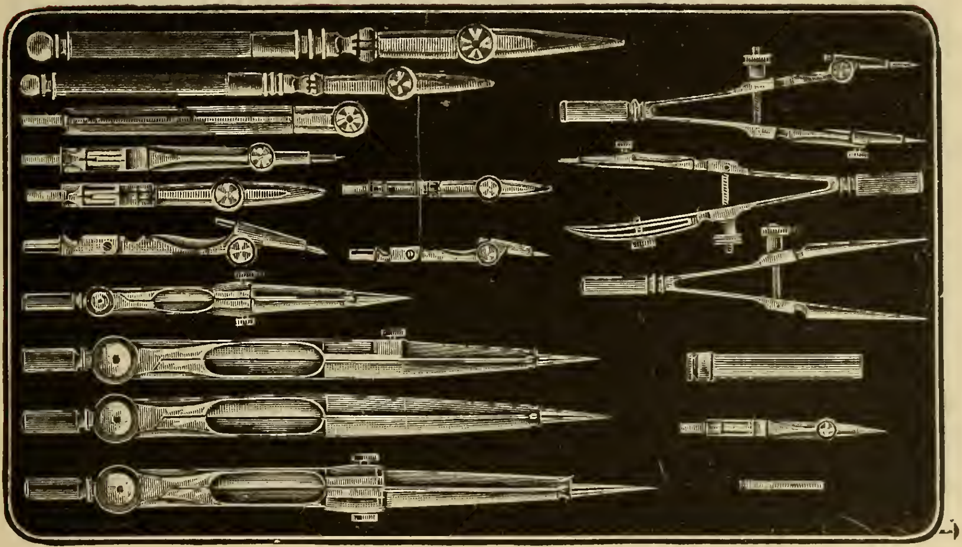


1664

No. 1664 contg.: No. 1616. Compass, 5½ inch, with fixed Needle Point, Pen, Pencil and Lengthening Bar;
1615. Hair Spring Divider, 5 inch;
1630. Steel Spring Bow Divider, 4 inch, German Silver Handle;
1631. " Bow Pen, 4 " " "
1632. " Bow Pencil, 4 " " "
1606. Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle;
1605. " 4¾ " " "
Box of Leads;
Each $12.75

FINE

GERMAN DRAWING INSTRUMENTS.



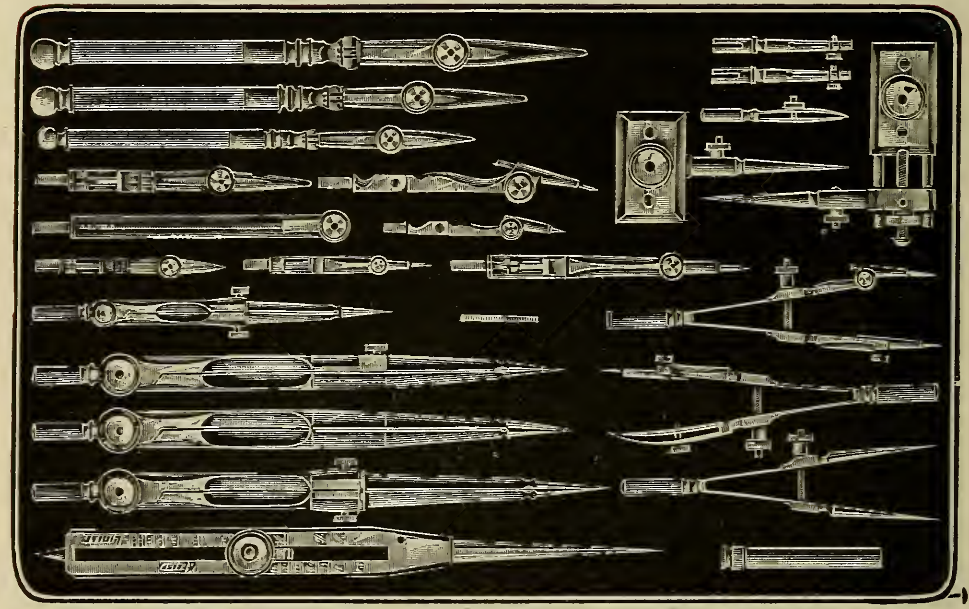
1665

No. 1665 contg.: No. 1614. Plain Divider, 5 inch ;
1615. Hair Spring Divider, 5 inch ;
1621. Compass, 5½ inch, with 2 Steel Points, Pen, Pencil and Needle Points, and Lengthening Bar ;
1613. Compass, 3½ inch, with 2 Steel Points, Pen, Pencil and Needle Points ;
1606. Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle ;
1605. " 4¾ " " "
1630. Steel Spring Bow Divider, 4 inch, German Silver Handle ;
1631. " Bow Pen, 4 " " "
1632. " Bow Pencil, 4 " " "
Box of Leads ;

Each.. $16.50

FINE

GERMAN DRAWING INSTRUMENTS.



1666

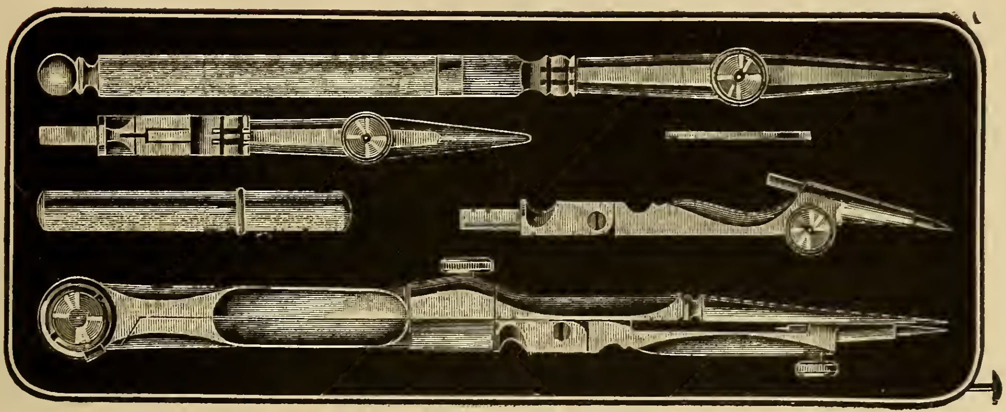
No. 1666 contg.: No. 1614. Plain Divider, 5 inch ;
1615. Hair Spring Divider, 5 inch ;
1621. Compass, 5½ inch, with two Steel Points, Pen, Pencil and Needle Points, and Lengthening Bar;
1613. Compass, 3½ inch, with two Steel Points, Pen, Pencil and Needle Points;
1606. Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle;
1605. " " 4¾ " " " " "
1604. " " 4 " " " " "
1547. Proportional Dividers, 7 inch ;
Beam Compass, with two Steel Points, Pen, Pencil and Needle Points ;
1630. Steel Spring Bow Divider, 4 inch, German Silver Handle;
1631. " " " Pen, 4 " " " "
1632. " " " Pencil, 4 " " " "
Box of Leads ;
Each $36.00

No. 1667 containing same as No. 1666 in Fine Polished Walnut Case, with Lock and Tray..each, $40.00

SUPERIOR

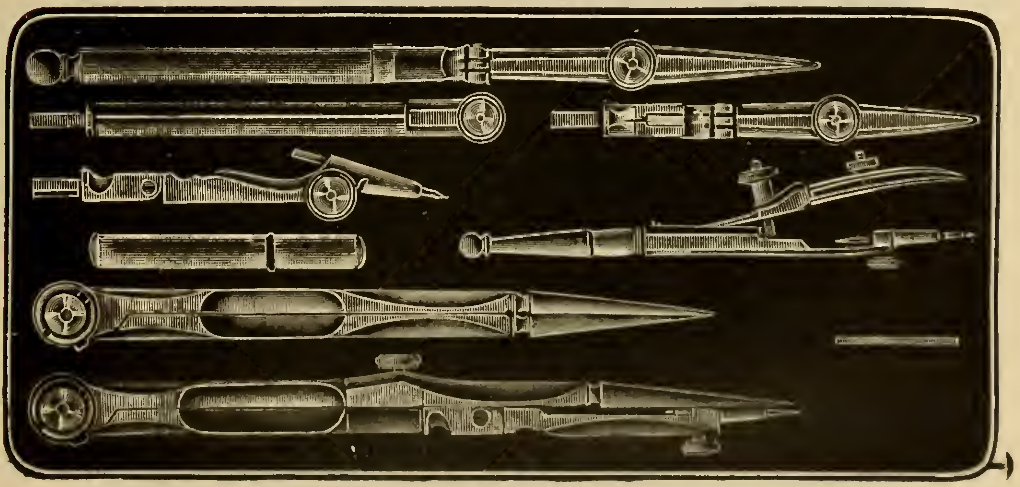
GERMAN SILVER SCHOOL INSTRUMENTS.

In Cloth Covered Cases.



1675

No. 1675 contg.: Compass, 5½ inch, with fixed Needle Point, Pen and Pencil parts;
Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle;
Box of Leads;
Each..$3.00



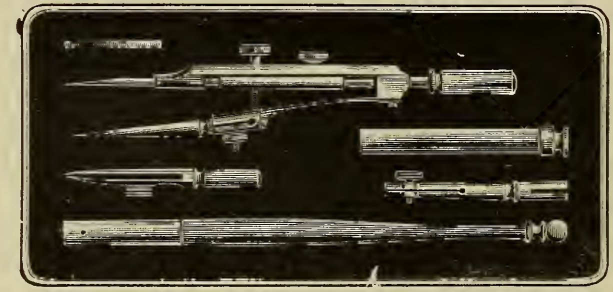
1676

No. 1676 contg.: Plain Divider, 5 inch;
Compass, 5½ inch, with fixed Needle Point, Pen and Pencil parts, and Lengthening Bar;
Bow Pen, 3½ inch;
Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle;
Box of Leads;
Each..$5.00

SUPERIOR

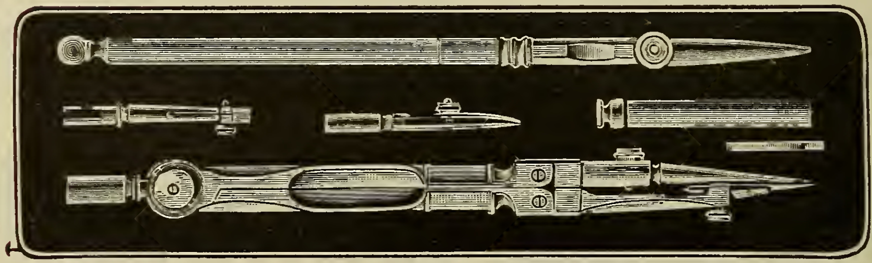
GERMAN SILVER SCHOOL INSTRUMENTS.

In Morocco Covered Cases.



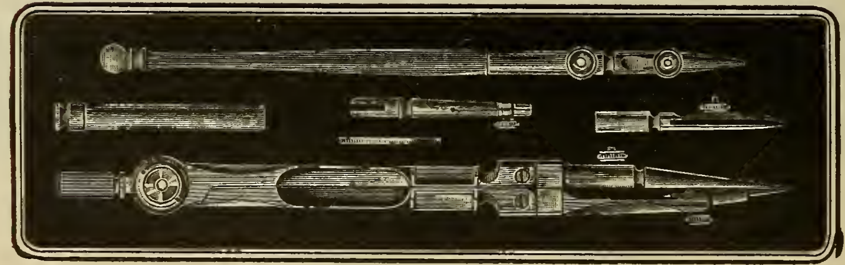
1677

No. 1677 contg.: Adjustable Bow Pen, 4 inch, with Pen, Pencil and Needle parts; Ebony Handle for Pen and Pencil parts;
Each $3.50



1678

No. 1678 contg.: Compass, 5½ inch, fixed Needle Point, Pen and Pencil parts;
Drawing Pen, 5½ inch, Ebony Handle;
Box of Leads;
Each $2.50

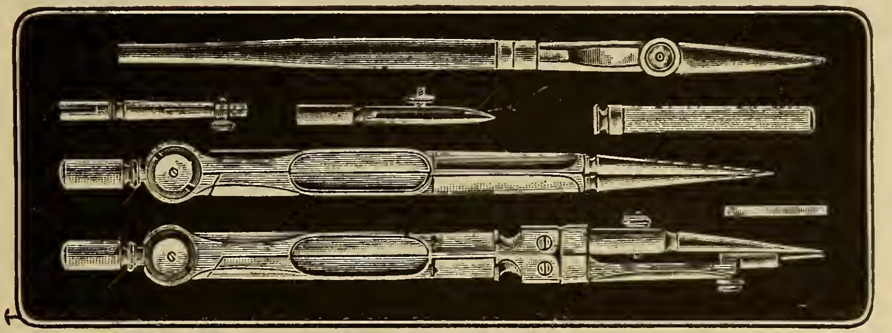


1679

No. 1679 contg.: Compass, 5½ inch, fixed Needle Point, Pen and Pencil parts;
Drawing Pen, 5½ inch, Ebony Handle;
Box of Leads;
Each $2.75

SUPERIOR

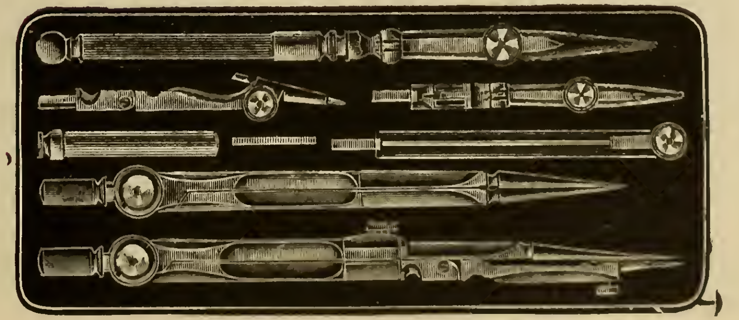
GERMAN SILVER SCHOOL INSTRUMENTS.



1680

No. 1680 contg.: Plain Divider, 5 inch ;
Compass, 5½ inch, fixed Needle Point, Pen and Pencil parts;
Drawing Pen, 5½ inch, Ebony Handle ;
Box of Leads ;

Each.. $3.00



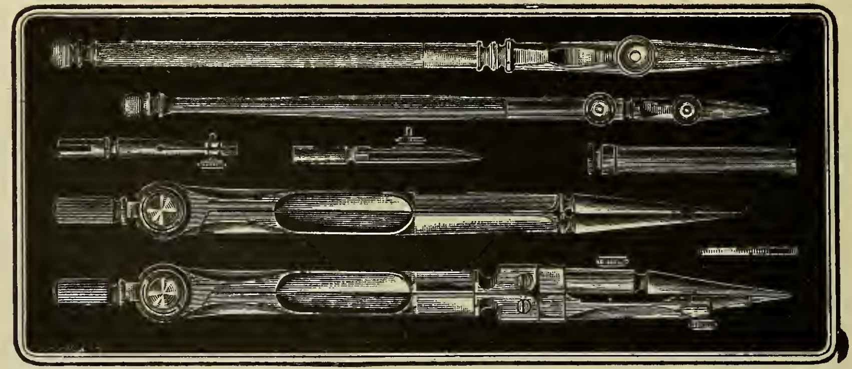
1681

No. 1681 contg.: Plain Divider, 5 inch ;
Compass, 5½ inch, with fixed Needle Point, Pen, Pencil and Lengthening Bar ;
Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle ;
Box of Leads ;

Each.. $4.25

SUPERIOR

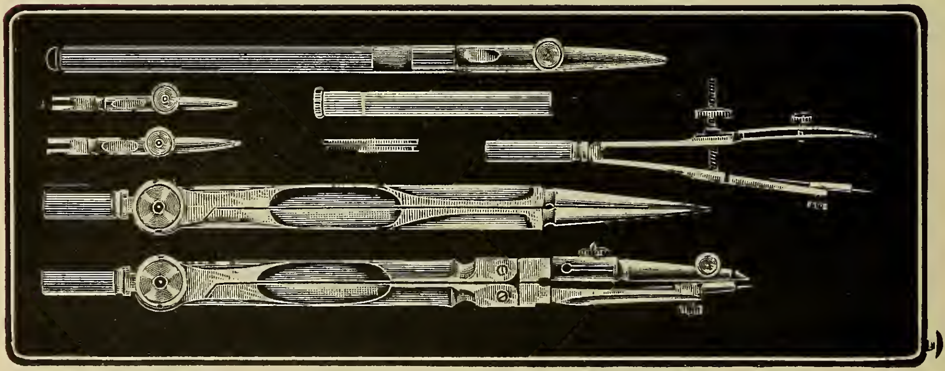
GERMAN SILVER SCHOOL INSTRUMENTS.



1682

No. 1682 contg.: Plain Divider, 5 inch ;
Compass, 5½ inch, with fixed Needle Point, Pen and Pencil parts ;
Drawing Pen, 6 inch, Ebony Handle ;
" 5½ " "
Box of Leads ;

Each........................ .... $5.00



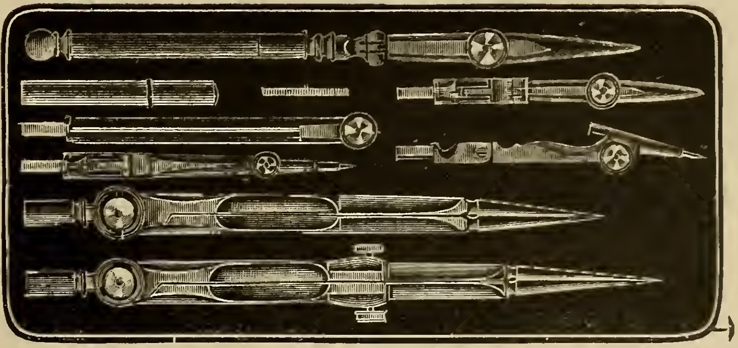
1683

No. 1683 contg.: Plain Divider, 5 inch ;
Compass, 5½ inch, with fixed Needle Point, Pen and Pencil parts ;
Drawing Pen, 5½ inch, Ebony Handle ;
Bow Pen, 3½ " German Silver Handle ;
Box of Leads ;

Each.. $5.00

SUPERIOR

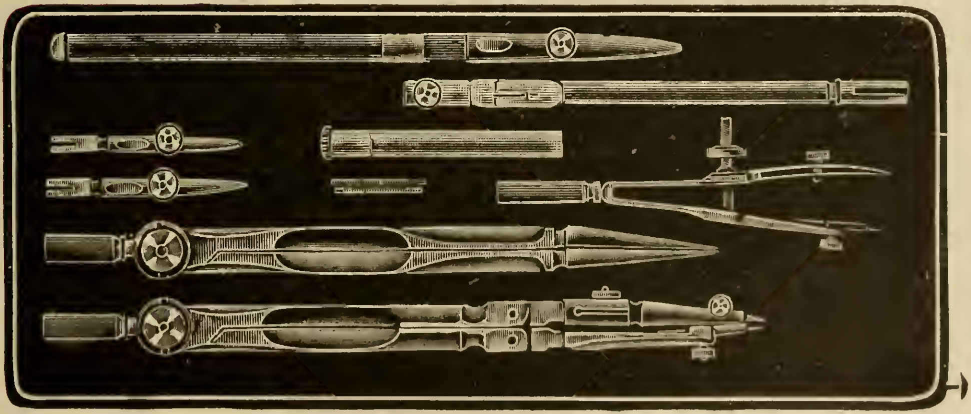
GERMAN SILVER SCHOOL INSTRUMENTS.



1684

No. 1684 contg.: Plain Divider, 5 inch ;
Compass, 5½ inch, with 2 Steel Points, Pen, Pencil and Lengthening Bar ;
Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle ;
Box of Leads ;

Each	$5.25



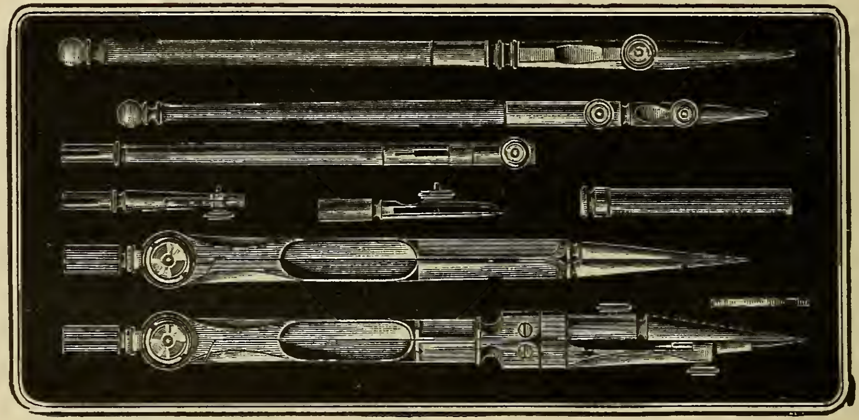
1685

No. 1685 contg.: Plain Divider, 5 inch ;
Compass, 5½ inch, fixed Needle Point, Pen and Pencil parts, and Lengthening Bar ;
Drawing Pen, 5½ inch, Ebony Handle ;
Bow Pen, 3½ inch, German Silver Handle ;
Box of Leads ;

Each	$5.50

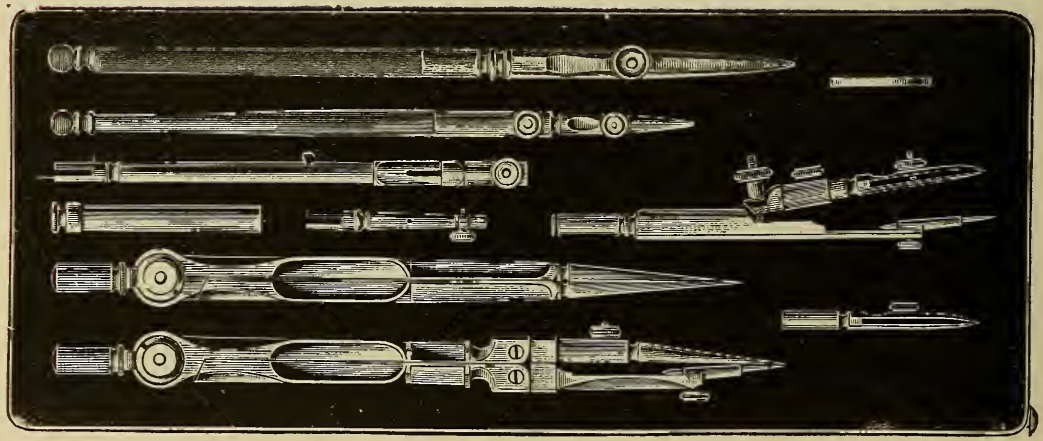
SUPERIOR

GERMAN SILVER SCHOOL INSTRUMENTS.



1686

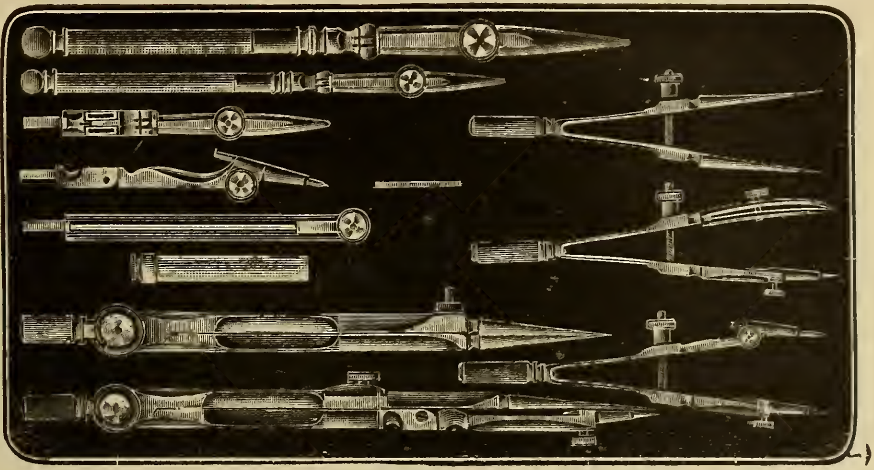
No. 1686 contg.: Plain Divider, 5 inch;
Compass, 5½ inch, with fixed Needle Point, Pen and Pencil parts, and Lengthening Bar;
Drawing Pen, 6 inch, Ebony Handle;
" 5½ " "
Box of Leads;
Each.. $5.50



1687

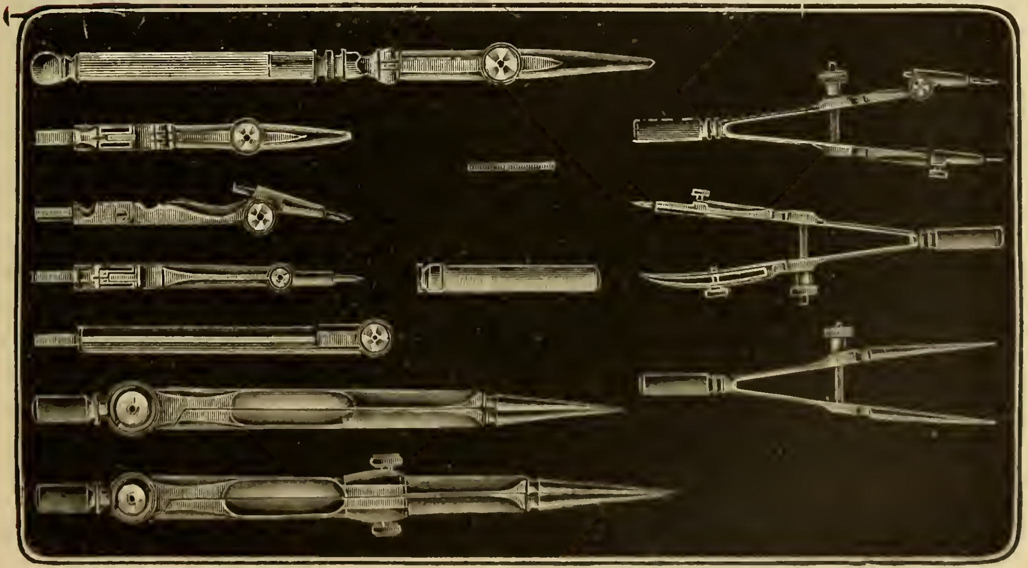
No. 1687 contg.: Plain Divider, 5 inch;
Compass, 5½ inch, with fixed Needle Point, Pen and Pencil parts, and Lengthening Bar;
Drawing Pen, 6 inch, Ebony Handle;
" 5½ " "
Bow Pen, 4 inch, with Pen and Pencil parts;
Box of Leads;
Each.. $7.75

SUPERIOR
GERMAN SILVER SCHOOL INSTRUMENTS.



1688

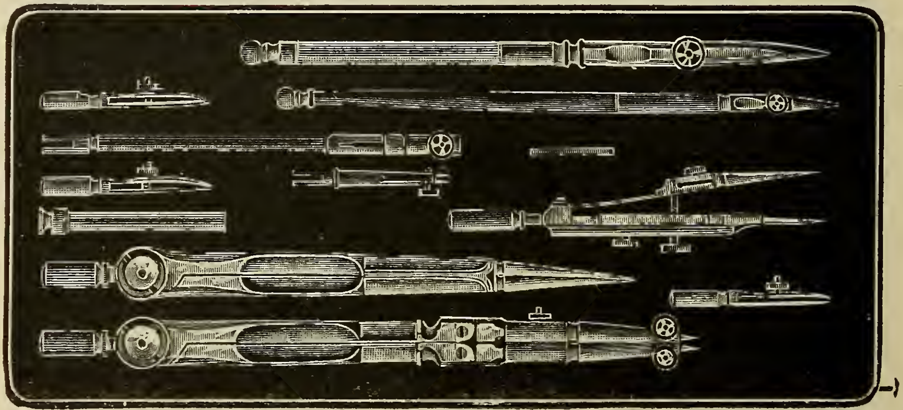
No. 1688 contg.: Hair Spring Divider, 5 inch;
Compass, 5½ inch, with fixed Needle Point, Pen, Pencil and Lengthening Bar;
Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle;
" 4½ " " "
Steel Spring Bow Divider, 4 inch, German Silver Handle:
" Bow Pen, 4 " " "
" Bow Pencil, 4 " " "
Box of Leads; Each......... $9.25



1689

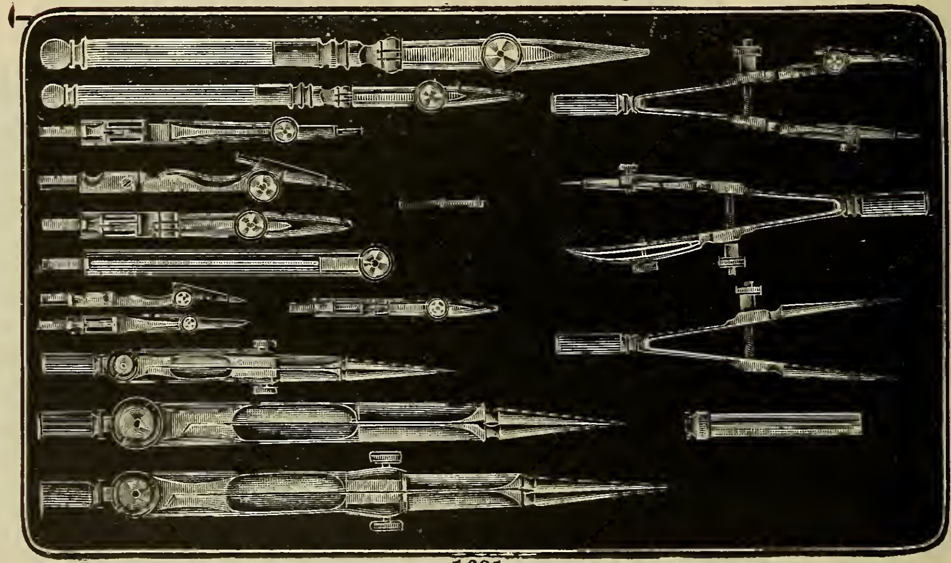
No. 1689 contg.: Plain Divider, 5 inch;
Compass, 5½ inch, with 2 Steel Points, Pen, Pencil and Needle Points;
Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle;
Steel Spring Bow Divider, 4 inch, German Silver Handle;
" Bow Pen, 4 " " "
" Bow Pencil, 4 " " "
Box of Leads; Each......... $9.50

SUPERIOR
GERMAN SILVER SCHOOL INSTRUMENTS.



1690

No. 1690 contg.: Plain Divider, 5 inch;
Compass, 5½ inch, fixed Needle Point, Pen and Pencil parts, and Lengthening Bar;
Drawing Pen, 6 inch, Ebony Handle;
" 5½ " "
Adjustable Bow Pen, 4 inch;
Box of Leads; Each......... $10.00

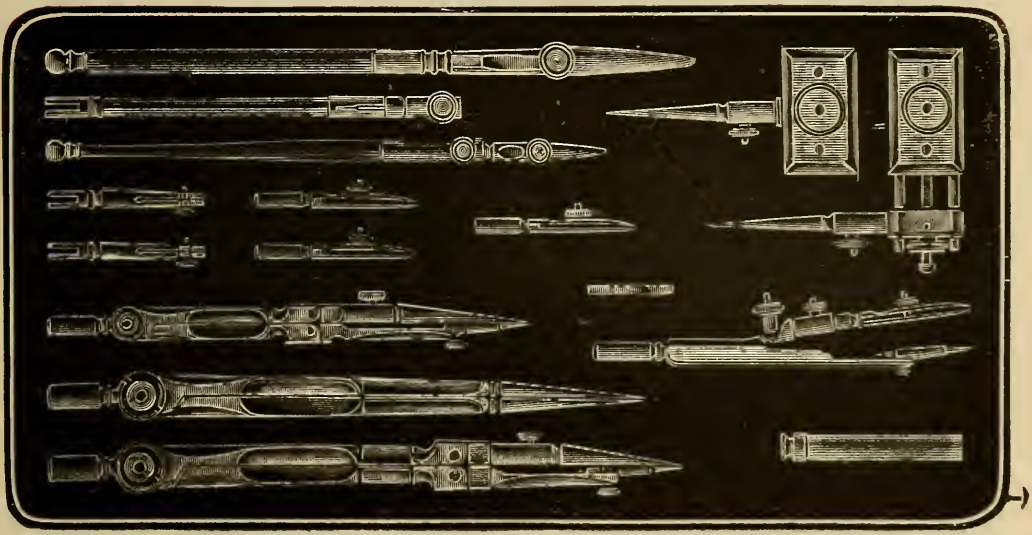


1691

No. 1691 contg.: Plain Divider, 5 inch;
Compass, 5½ inch, with 2 Steel Points, Pen, Pencil and Lengthening Bar;
" 3½ " " 2 " " " Needle Point;
Drawing Pen, 5½ inch, Hinge Blade, Ivory Handle;
" 4½ " " "
Steel Spring Bow Divider, 4 inch, German Silver Handle;
" Bow Pen, 4 " " "
" Bow Pencil, 4 " " "
Box of Leads; Each......... $12.00

SUPERIOR

GERMAN SILVER SCHOOL INSTRUMENTS.



1692

No. 1692 contg.: Plain Divider, 5 inch ;

Compass, 5½ inch, with fixed Needle Point, Pen and Pencil parts, and Lengthening Bar ;

Compass, 4 inch, with fixed Needle Point, Pen, and Pencil parts;

Drawing Pen, 6 inch, Ebony Handle ;

" 5½ " "

Bow Pen, 3½ inch, with Pen and Pencil parts ;

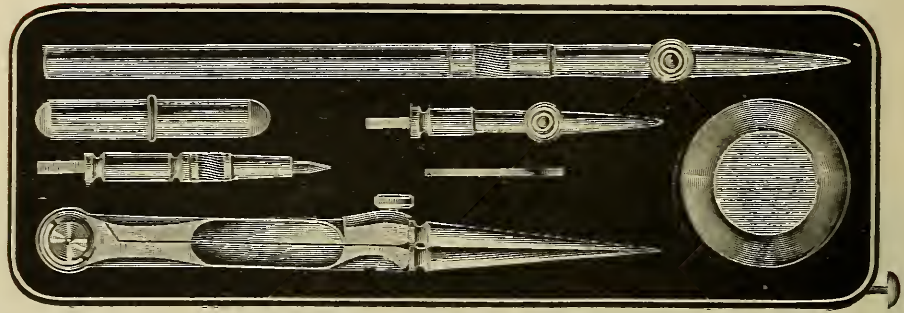
Beam Compass, with 2 Steel Points, Pen, Pencil and Needle Point ;

Box of Leads;

Each, ... $18,00

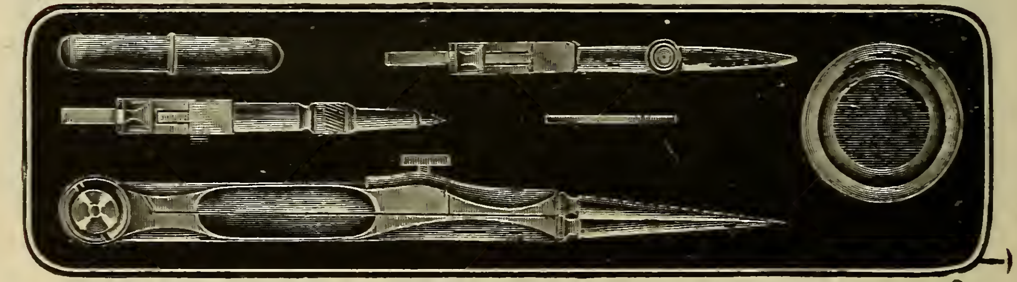
SCHOOL INSTRUMENTS

NICKEL PLATED.



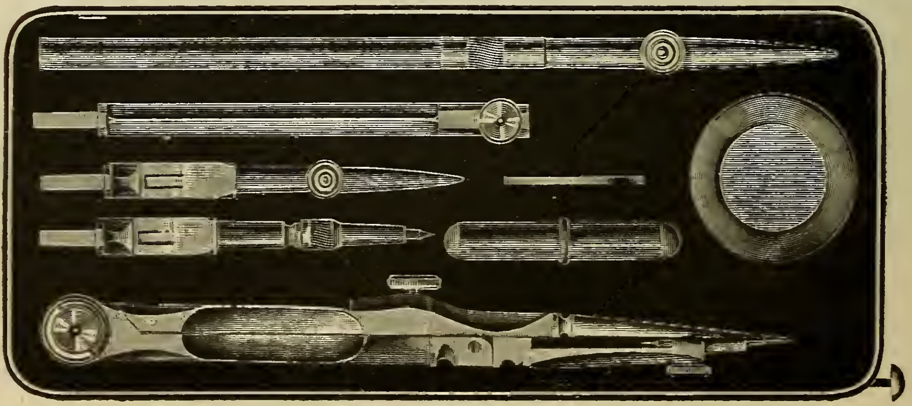
1693

No. 1693 contg.: Compass, 3½ inch, with Pen and Pencil parts;
Drawing Pen, 5 inch. Ebony Handle;
Color Saucer; Box of Leads; Each $1.00



1694

No. 1694 contg.: Compass, 4½ inch, with Pen and Pencil parts;
Color Saucer; Box of Leads; Each......... $1.10

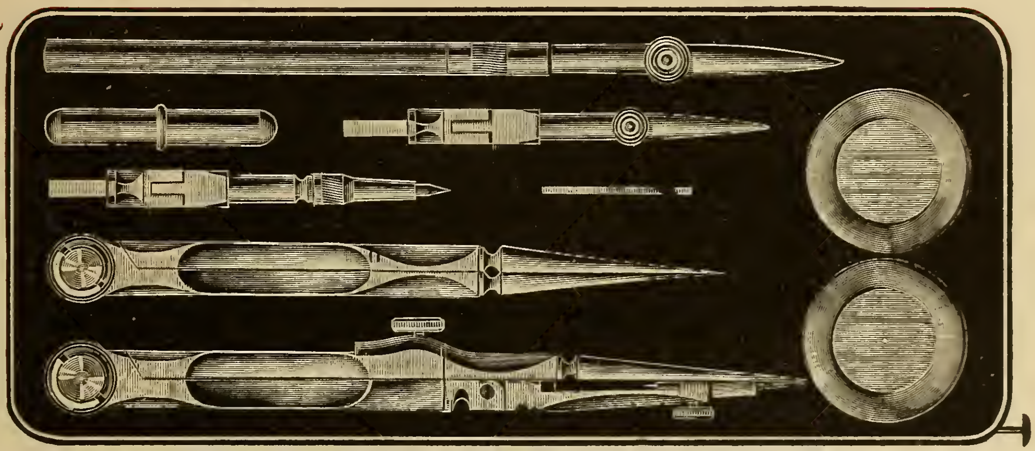


1695

No. 1695 contg.: Compass, 4½ inch, with fixed Needle Point, Pen, Pencil and
Lengthening Bar;
Drawing Pen, 5 inch, Ebony Handle;
Color Saucer; Box of Leads; Each......... $1.75

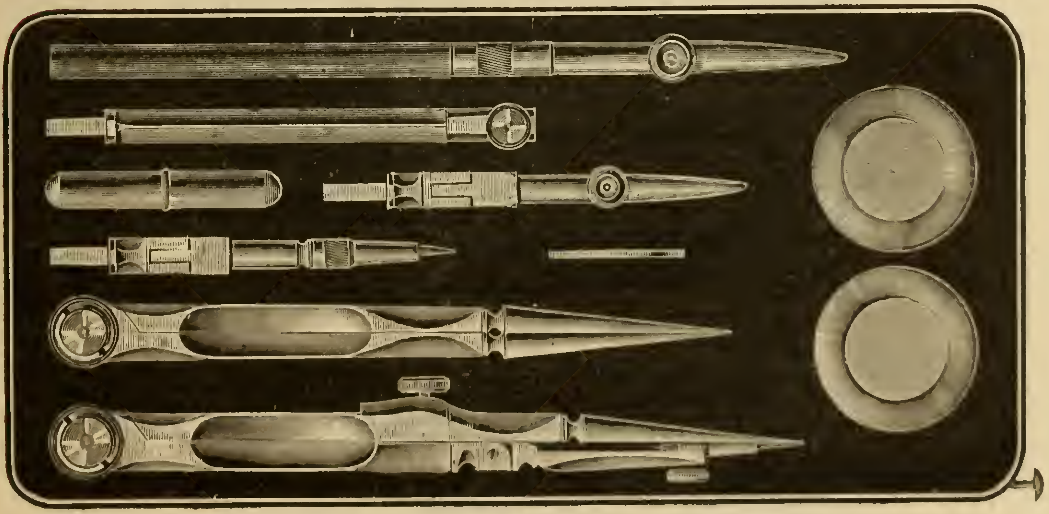
SCHOOL INSTRUMENTS.

NICKEL PLATED.



1696

No. 1696 contg.: Plain Divider, 4 inch;
Compass, 4½ inch, with fixed Needle Point, Pen and Pencil parts;
Drawing Pen, 5 inch, Ebony Handle;
Color Saucers; Box of Leads; Each......... $2.00

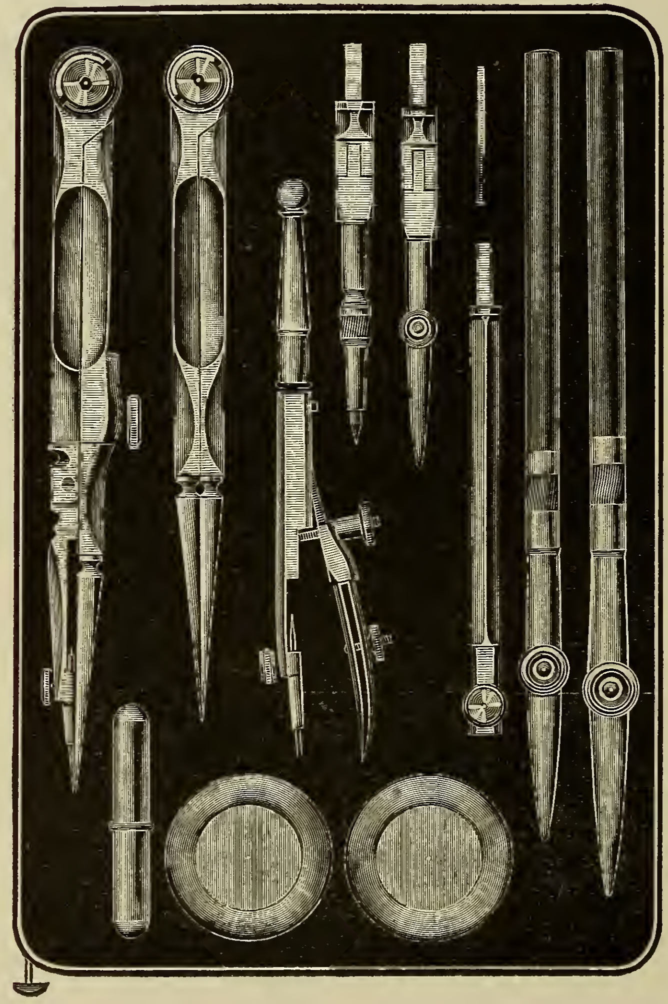


1697

No. 1697 contg.: Plain Divider, 4 inch;
Compass, 4½ inch, with fixed Needle Point, Pen and Pencil parts, and Lengthening Bar;
Drawing Pen, 5 inch, Ebony Handle;
Color Saucers; Box of Leads; Each......... $2.25

SCHOOL INSTRUMENTS.

NICKEL PLATED.



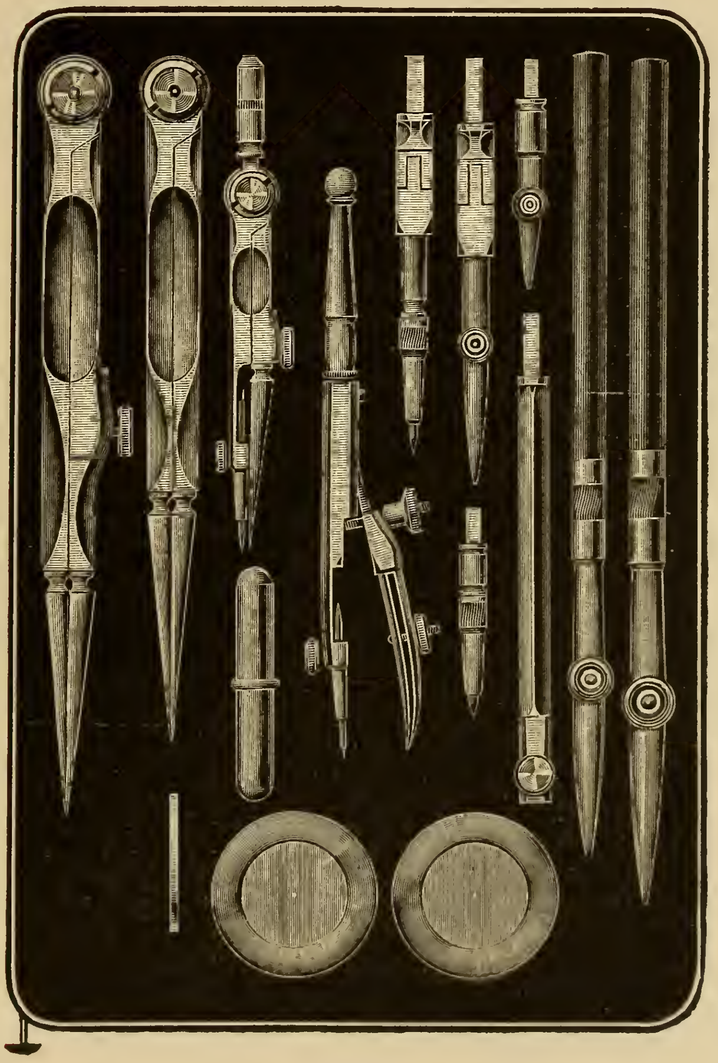
1698

No. 1698 contg.: Plain Divider, 4 inch;
Compass, 4½ inch, with fixed Needle Point, Pen and Pencil parts, and Lengthening Bar;
Drawing Pen, 5 inch, Ebony Handle;
" 4½ " "
Bow Pen, 4 inch, Ivory Handle;
Color Saucers;
Box of Leads;
Each.. $3.40

No. 1699 contg.: Same as above, but with Plain Divider, 4½ inch;
Compass, 5½ inch;
Each. $4.50

SCHOOL INSTRUMENTS.

NICKEL PLATED.



1700

No. 1700 contg.: Plain Divider, 4 inch ;
Compass, 4½ inch, with Pen, Pencil and Lengthening Bar ;
" 2½ " with fixed Needle Point, Pen and Pencil parts ;
Drawing Pen, 5 inch, Ebony Handle ;
" 4½ " "
Bow Pen, 4 " Ivory Handle ;
Color Saucers ;
Box of Leads ;
Each.. $3.75

SEPARATE PARTS FOR INSTRUMENTS.

PARTS FOR "LENOX" INSTRUMENTS.

		Each.
1705.	Pen Points, Pencil Points, Needle Points for 3½ inch Compasses,	$ 1.25
	“ “ “ “ “ “ “ 4½, 5½, 6 inch “	1.60
	“ “ “ “ “ “ “ 6½, 7 “ “	1.75
	“ “ “ “ “ “ “ Beam “	1.00
	Lengthening Bars for 4½, 5½, 6 inch Compasses...	1.35
	“ “ “ 6½, 7 “ “ ...	1.50
	Screws and Nuts...$0.12 to	.15
	Shouldered Needles... .12 to	.15
	Ivory Handles for Drawing Pens, 4 inch...	.25
	“ “ “ “ “ 4¾ “ ...	.30
	“ “ “ “ “ 5½ “ ...	.35
	“ “ “ “ “ 6½ “ ...	.40

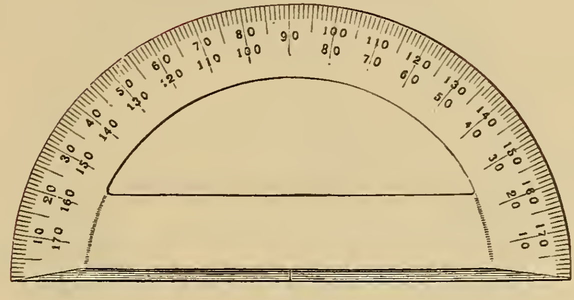
PARTS FOR GERMAN ROUND SYSTEM INSTRUMENTS.

		Each.
1706.	Pen Points, Pencil Points, Needle Points for 3½ inch Compasses,	$ 1.10
	“ “ “ “ “ “ “ 5½ “ “	1.25
	Lengthening Bar for 3½ inch Compasses...	.75
	“ “ “ 5½ “ “ ...	1.00
	Round Point part for Nos. 1401 and 1402...	.65
	“ “ “ “ No. 1407...	.75
	“ Steel Point parts for Beam Compasses...	.60
	Pen and Pencil parts for Pocket Compasses, No. 1417...	2.00
	Pen, Pencil and Needle Point part for Beam Compasses...	1.00
	Slide part, with Steel Points, for Tubular Beam Compasses...	3.30
	Tubular Bars, for Beam Compasses, Nos. 1435 and 1437...	2.00
	“ “ “ “ “ No. 1439...	3.00
	Steel Point, to screw in Dividers, 5½ inch and 3½ inch...	.40
	Dotting Weeels, for Nos. 1413 and 1415...	.40
	Shouldered Needles...	.20
	Screws and Nuts, small...	.10
	“ “ “ large...	.15

PARTS FOR FINEST GERMAN INSTRUMENTS.

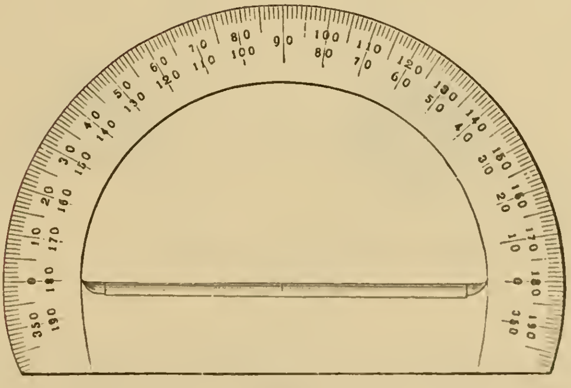
		Each.
1707.	Pen Points, Pencil Points, Needle Points for 3½ inch Compasses,	$ 1.00
	“ “ “ “ “ “ “ 5½ “ “	1.25
	“ “ “ “ “ “ “ 6 “ “	1.35
	“ “ “ “ “ “ “ Beam “	.80
	Screws and Nuts...$0.10 to	.12
	Shouldered Needles...	.08
	Handles for Drawing Pens, 4½ or 5 inch...	.20
	“ “ “ “ 5½ or 6 “ ...	.25

METAL PROTRACTORS.



1725

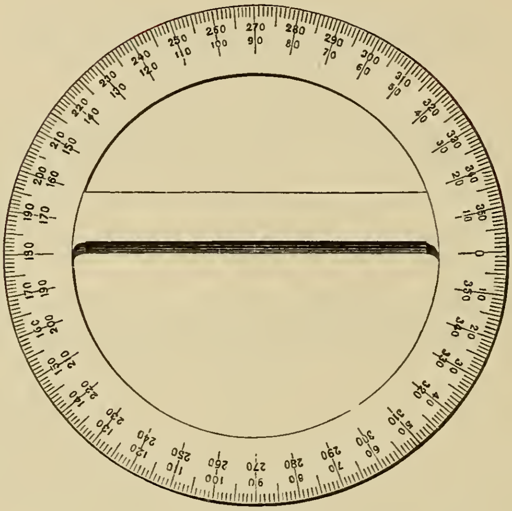
1725.	Semicircular German Silver Protractor, 4 inch, beveled edge, center on outer edge, divided to 1 degree	each, $1.60
1726.	Same, 5 inch, divided to ½ degrees	“ 2.25
1727.	“ 6 “ “ ½ “	“ 2.75
1728.	“ 6 “ “ ¼ “	“ 3.50
1729.	“ 7 “ “ ½ “	“ 4.50
1730.	“ 8 “ “ ½ “	“ 5.25



1731

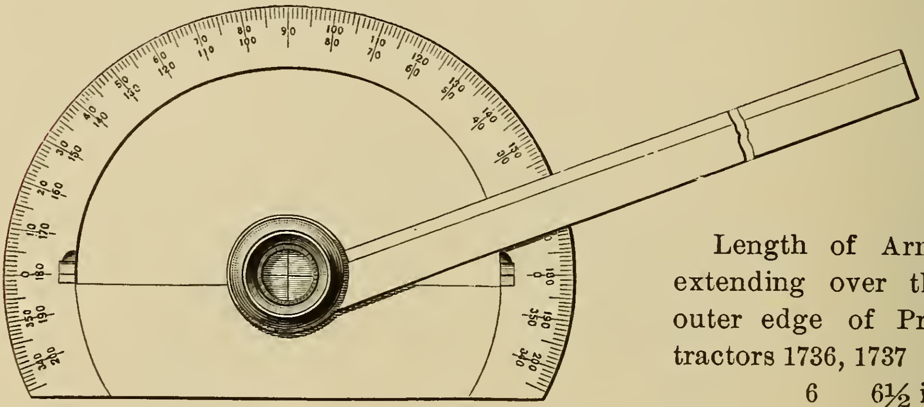
1731.	Semicircular German Silver Protractor, 4 inch, beveled edge, center on inner edge, divided to 1 degree	each, $2.35
1732.	Same, 5 inch, divided to ½ degrees	“ 3.00
1733.	“ 6 “ “ ½ “	“ 3.50
1734.	“ 6 “ “ ¼ “	“ 4.25

METAL PROTRACTORS.



1735

1735. Circular German Silver Protractor, 5 inch, beveled edge, divided to ½ degrees......each, $5.50



Length of Arms extending over the outer edge of Protractors 1736, 1737
6 6½ in.

1736

1736. Semicircular German Silver Protractor, 6 inch, with Horn-center and movable arm, divided to ½ degrees......each, $7.50

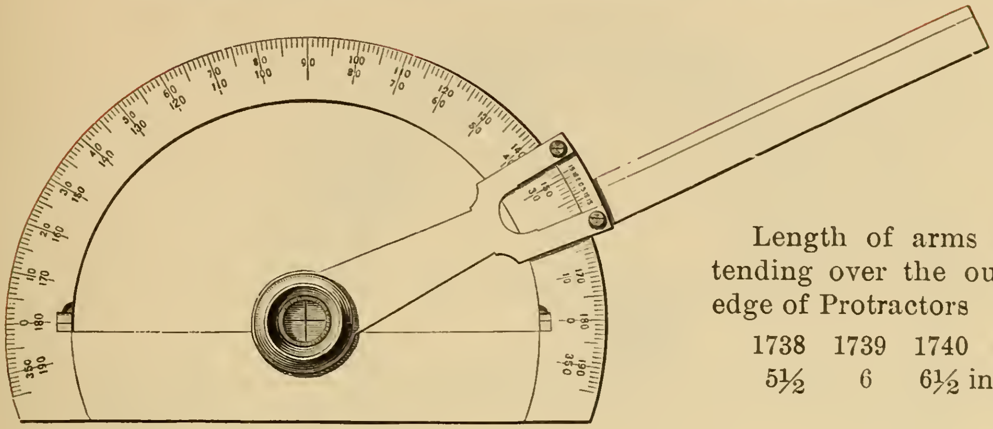
1737. Same, 7 inch, divided to ½ degrees ...... " 9.00

Elegant Morocco Cases Lined with Finest Silk Velvet for Protractors:

Numbers...........	1738	1739	1740	1741	1742	1743
Each..................	$3.00	3.75	4.50	3.50	4.50	6.00

Numbers...........	1741 with 1745	1742 with 1745	1743 with 1745
Each..................	$3.75	4.75	6.25

METAL PROTRACTORS.



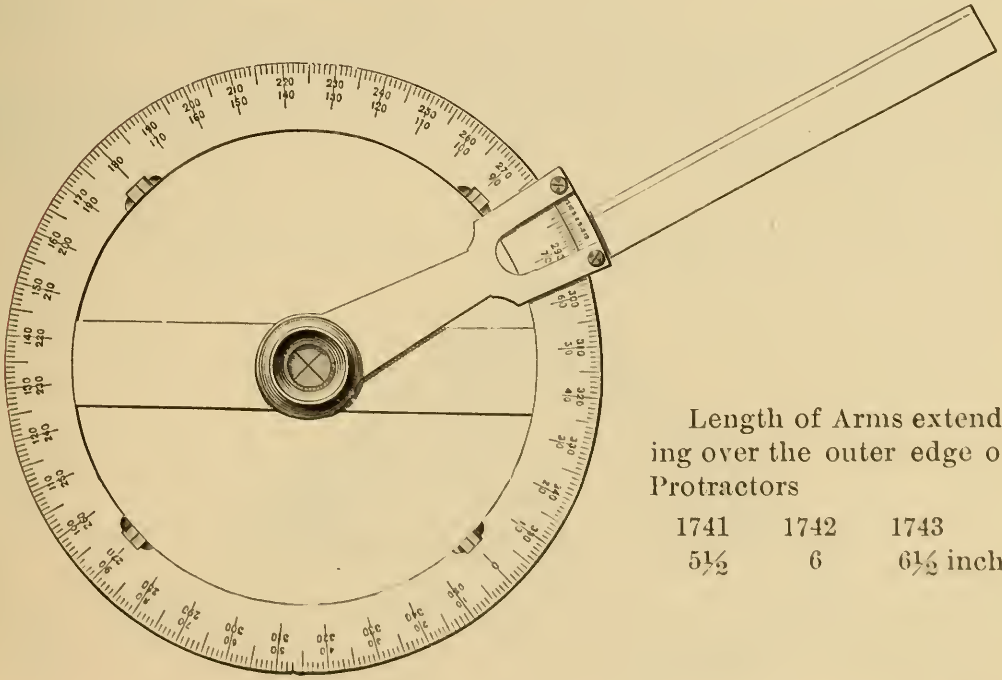
1739

Length of arms extending over the outer edge of Protractors

1738	1739	1740
5½	6	6½ inch.

Each.

1738. Semicircular German Silver Protractor, 5½ inch, with Horn-center, divided to ½ degrees, Vernier reading to 3 minutes......$10.00
1739. Same, 8 inch, divided ¼ " " " 1 " 14.00
1740. " 10 " " ¼ " " " 1 " 17.00



1742

Length of Arms extending over the outer edge of Protractors

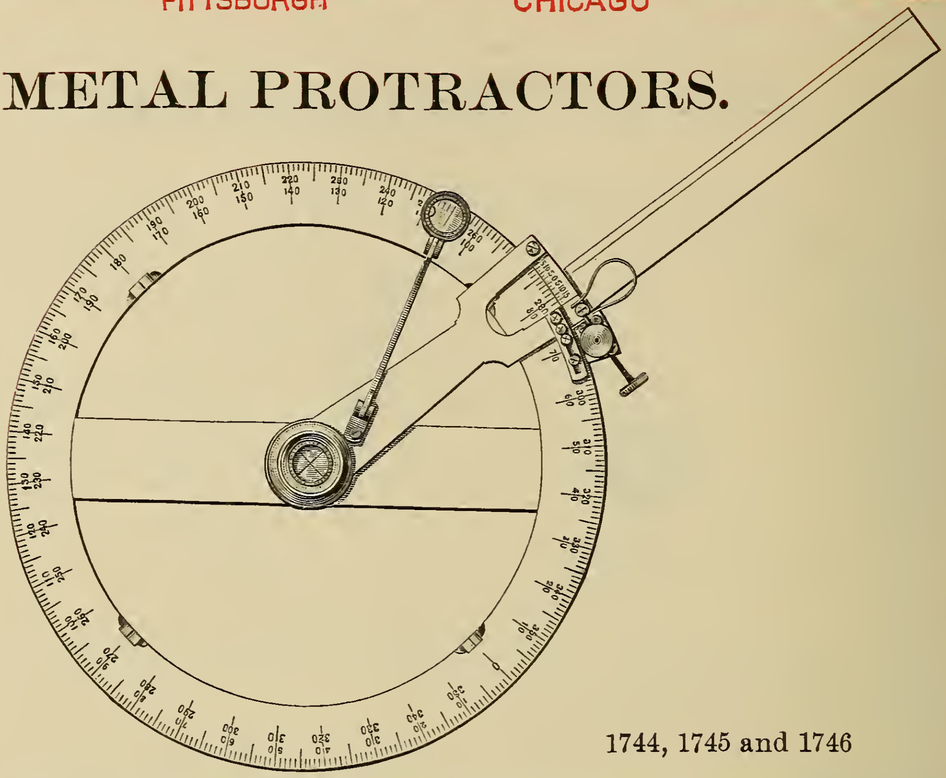
1741	1742	1743
5½	6	6½ inch.

Each.

1741. Circular German Silver Protractor, 5½ inch, with Horncenter, divided to ½ degrees, Vernier reading to 3 minutes..................$14.00
1742. Same, 8 inch, divided ¼ degrees, Vernier reading to 1 minute. 16.00
1743. " 10 " " ¼ " " " 1 " 20.00

See foot of page 130 for Cases for Protractors.

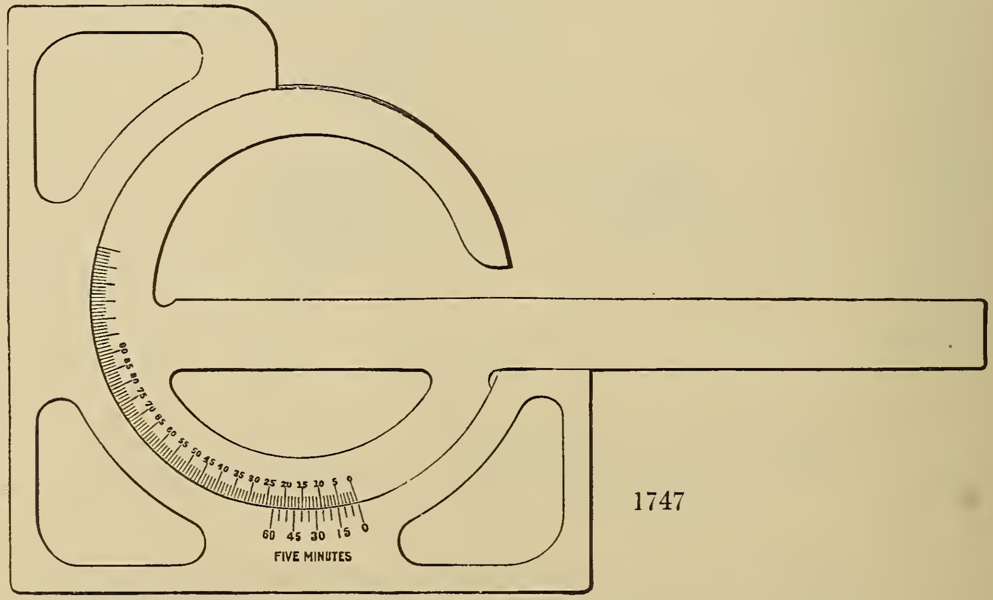
METAL PROTRACTORS.



1744, 1745 and 1746

The above cut shows the 8-inch German Silver Protractor with Horn Center, No. 1742, divided to ¼ degrees, Vernier reading to 1 minute, with Clamp Screw, Micrometer Adjusting Screw to Vernier, and Magnifying Lense.

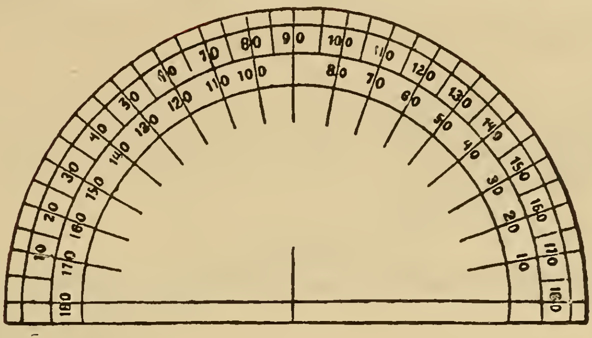
1744.	Clamp Screw for Nos. 1738 to 1743	each, $2.15
1745.	" and Micrometer Adjusting Screw to Vernier for Nos. 1738 to 1743	" 5.65
1746.	Magnifying Lense for Nos. 1738 to 1743	" 4.50



1747

1747.	This Protractor is made from sheet steel and is light and durable. The length of the blade is 8½ inches. The graduations read to degrees, and the Vernier reads to five minutes	each, $6.50
1748.	Same as No. 1747, in Morocco Case	" 7.75

AMBER PROTRACTORS.



1749

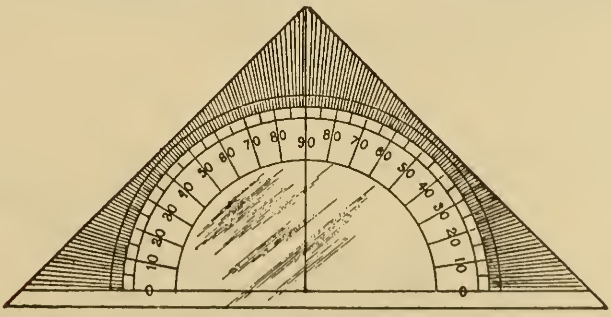
The dividing lines of these Amber Protractors are on the side facing the drawing, and the amber being perfectly transparent they afford a most accurate reading of the degrees.

						Each.
1749.	Amber Protractor, Transparent,	Half Circle,	½ degrees,	4 inches....		$0.35
1750.	" "	"	½ "	5 "	...	.50
1751.	" "	"	½ "	6 "	...	.75
1752.	" "	"	½ "	7 "	...	1.00
1753.	" "	"	½ "	8 "	...	1.35
1754.	" "	"	½ "	9 "	...	1.75
1755.	" "	Circle,	½ "	6 "	...	1.75

HORN PROTRACTORS.

				Each.
1760.	Horn Protractor, Half Circle,	½ degrees,	5 inches........................	$0.25
1761.	" "	½ "	6 "	.30
1762.	" "	½ "	7 "	.40

AMBER TRIANGLE PROTRACTORS.



1765

				Each.
1765.	Amber Triangle Protractor, whole degrees,	5 inch,	Triangle 45°........	$0.60
1766.	" " "	6 "	" 45°........	.75
1767.	" " "	7 "	" 45°.......	1.00

PAPER PROTRACTORS.

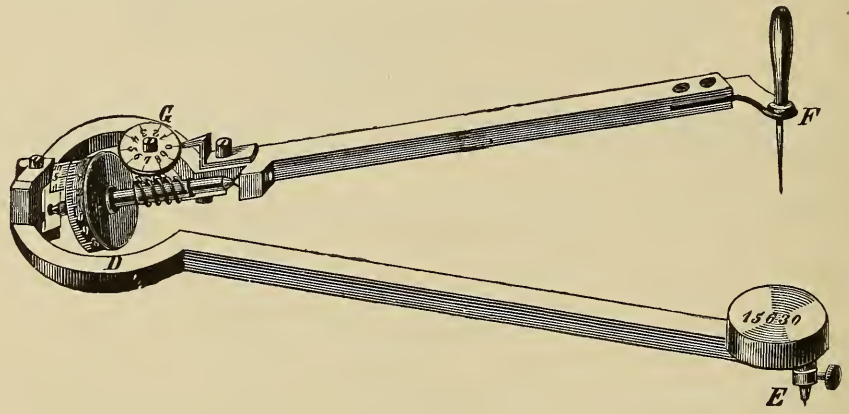
					Each.
1770.	Paper Protractor, Circular,	8 in. diam.,	in ½ deg.,	on paper...........	$0.25
1771.	" "	8 in. "	½ "	on bristol-board	.30
1772.	" "	13 in. "	¼ "	on paper..........	.30
1773.	" "	13 in. "	¼ "	on bristol-board	.40
1774.	" "	13 in. "	¼ "	on tracing paper.....	.30

PLANIMETERS.

AMSLER'S POLAR PLANIMETERS.

The Polar Planimeter is the simplest and most convenient instrument for measuring the area of surfaces on drawings and plans. It is of greatest importance to Engineers and others, as plots of ground, area of railroad profiles, indicator diagrams, sectional areas of vessels, areas of displacement of floating bodies, etc., can be ascertained very quickly.

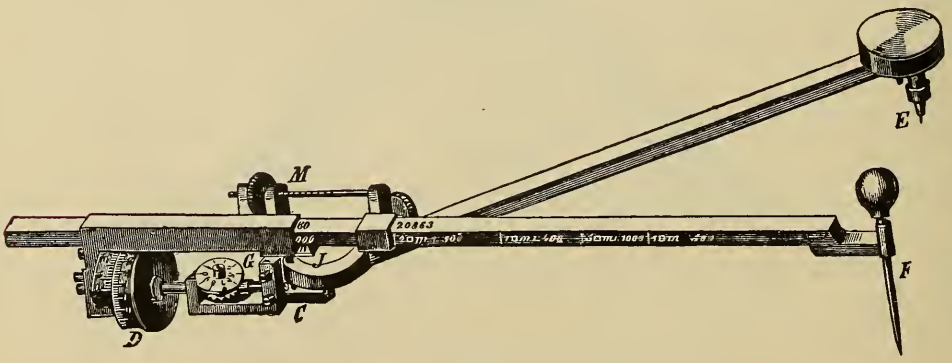
Full directions are furnished with each instrument.



1780

Each.

1780. Amsler's Polar Planimeter, German Silver, arranged for measurement of areas in square inches, viz.: 10, 1, $\frac{1}{10}$ and $\frac{1}{100}$ square inches. Range: Circle of 18 inches diameter. In Morocco case, with directions..$17.50



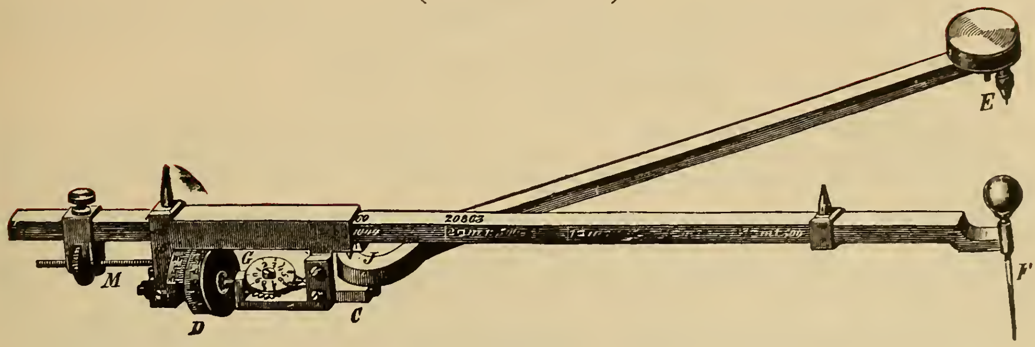
1781

Each.

1781. Amsler's Polar Planimeter, German Silver, arranged for measuring areas in either of several units (English and French.) Range: Circle of 24 inches diameter. In Morocco Case, with directions..$25.00

PLANIMETERS.

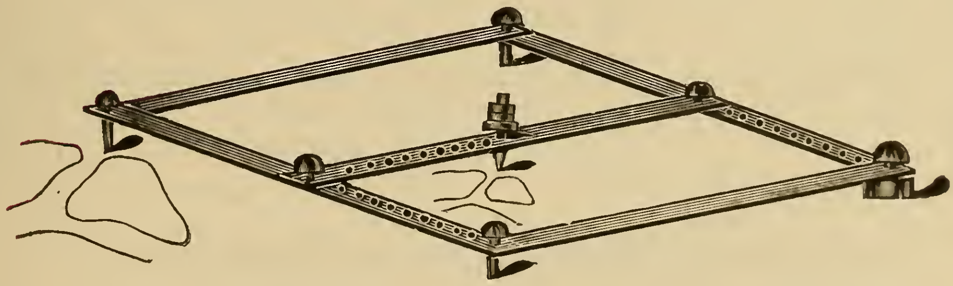
(CONTINUED.)



1782

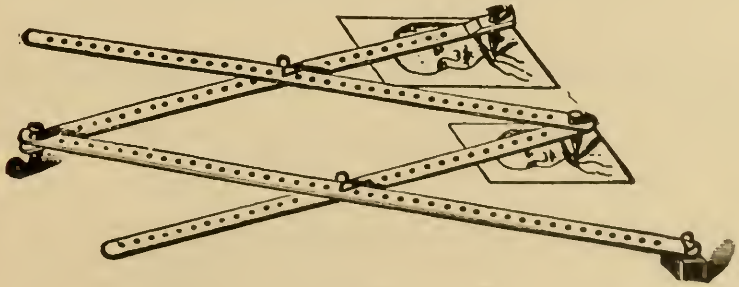
		Each.
1782.	Amsler's Polar Planimeter, German Silver, arranged for every kind of measurement, with special arrangement for finding rapidly the mean height of indicator diagrams. In Morocco Case, with directions..........	$30.00

PANTOGRAPHS.



1783

		Each.
1783.	Pantographs of Hardwood, with Brass Mountings, for reducing drawings, 22½ inches..........	$3.50



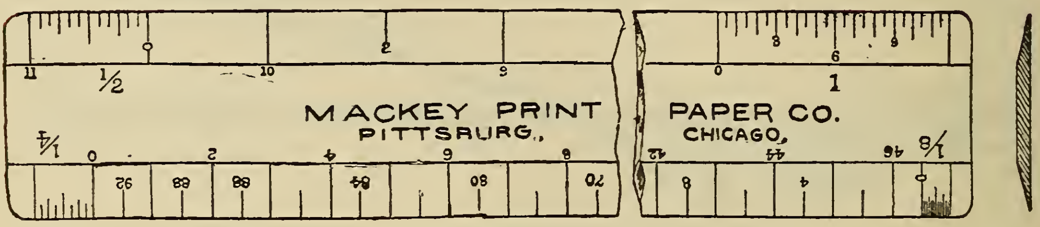
1784

		Each.
1784.	Pantographs of Hardwood, with Brass Mountings, for reducing and enlarging engravings, plans, drawings, etc., 21-inch arms,	$1.75
1785.	Same as 1784, with 41-inch arms..........	5.00

SCALES.

FLAT BOXWOOD AND WHITE EDGE SCALES.

Engine Divided, U. S. Standard.



1800

										Each.
1800.	Flat Boxwood	Scale,	6	inch,	div.	⅛, ¼, ½ and 1	inch	to the	foot,	$0.50
1801.	"	"	12	"	"	⅛, ¼, ½ and 1	"	"	"	.75
1802.	"	"	12½	"	"	⅛, ¼, ½ and 1	"	"	"	1.00
1803.	"	"	18	"	"	⅛, ¼, ½ and 1	"	"	"	1.50
1804.	"	"	24	"	"	⅛, ¼, ½ and 1	"	"	"	2.00
1805.	"	"	12	"	"	½ and 1	"	"	"	.75
1806.	"	"	12	"	"	¼ and ⅛	"	"	"	.75
1807.	"	"	12	"	"	¼, ⅛ and 1/16	"	"	"	.75

1810.	Flat Boxwood	Scale,	6	inch,	div.	⅜, ¾, 1½ and 3	inches	to the	foot,	.50
1811.	"	"	12	"	"	⅜, ¾, 1½ and 3	"	"	"	.75
1812.	"	"	18	"	"	⅜, ¾, 1½ and 3	"	"	"	1.50
1813.	"	"	24	"	"	⅜, ¾, 1½ and 3	"	"	"	2.00

FLAT SCALES, SECOND QUALITY.

										Each.
1815.	Flat Boxwood	Scale,	6	inch,	div.	⅛, ¼, ½ and 1	inch	to the	foot,	$0.35
1816.	"	"	12	"	"	⅛, ¼, ½ and 1	"	"	"	.50
1817.	"	"	6	"	"	⅜, ¾, 1½ and 3	"	"	"	.35
1818.	"	"	12	"	"	⅜, ¾, 1½ and 3	"	"	"	.50

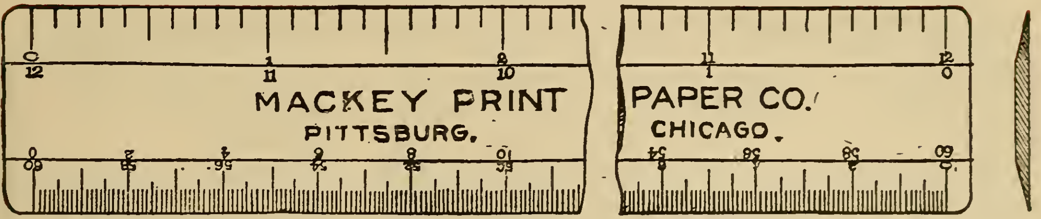
FLAT WHITE EDGE BOXWOOD SCALES.

										Each.
1820.	Flat Scale,	6	inch,	white edge,	div.	⅛, ¼, ½ and 1	inch	to the	foot,	$0.85
1821.	"	12	"	"	"	⅛, ¼, ½ and 1	"	"	"	1.25
1822.	"	12½	"	"	"	⅛, ¼, ½ and 1	"	"	"	1.50
1823.	"	18	"	"	"	⅛, ¼, ½ and 1	"	"	"	2.25
1824.	"	24	"	"	"	⅛, ¼, ½ and 1	"	"	"	3.00
1825.	"	6	"	"	"	⅜, ¾, 1½ and 3	"	"	"	.85
1826.	"	12	"	"	"	⅜, ¾, 1½ and 3	"	"	"	1.25
1827.	"	18	"	"	"	⅜, ¾, 1½ and 3	"	"	"	2.25
1828.	"	24	"	"	"	⅜, ¾, 1½ and 3	"	"	"	3.00

SCALES.

(CONTINUED.)

Engine Divided, U. S. Standard.



1830

FLAT POLISHED BOXWOOD SCALES.

							Each.
1830.	Flat Boxwood Scale,	6	inch,	div.	10 × 50	parts to the inch.........	$0.50
1831.	"	12	"	"	10 × 50	" " "	.75
1832.	"	6	"	"	20 × 40	" " "	.50
1833.	"	12	"	"	20 × 40	" " "	.75
1834.	"	6	"	"	30 × 60	" " "	.50
1835.	"	12	"	"	30 × 60	" " "	.75
1836.	"	6	"	"	80 × 100	" " "	1.00
1837.	"	12	"	"	80 × 100	" " "	1.50

FLAT WHITE EDGE BOXWOOD SCALES.

								Each.
1840.	Flat Scale,	6	inch,	white edge,	div.	10 × 50	parts to the inch......	$0.85
1841.	"	12	"	"	"	10 × 50	" " "	1.25
1842.	"	6	"	"	"	20 × 40	" " "	.85
1843.	"	12	"	"	"	20 × 40	" " "	1.25
1844.	"	6	"	"	"	30 × 60	" " "	.85
1845.	"	12	"	"	"	30 × 60	" " "	1.25
1846.	"	6	"	"	"	80 × 100	" " "	1.35
1847.	"	12	"	"	"	80 × 100	" " "	2.00

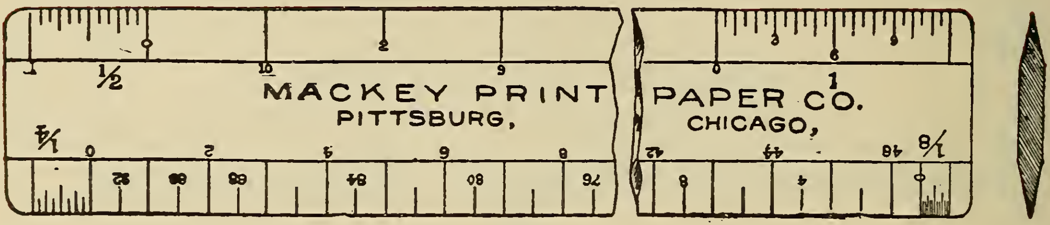
FLAT BOXWOOD METRIC SCALES.

						Each.
1850.	Flat Boxwood *Metric* Scale,	10	c-m long,	div.	m-m and ½ m-m......	$0.50
1851.	" "	20	"	"	" " ½ "	.60
1852.	" "	30	"	"	" " ½ "	.75
1853.	" "	50	"	"	" " ½ "	1.50

SCALES.

(CONTINUED.)

Engine Divided, U. S. Standard.



1855

FLAT POLISHED BOXWOOD SCALES.

		Each.
1855.	Flat Boxwood Scale, 6 inch, beveled, divided on both sides, divisions ⅛, ¼, ½, 1, ⅜, ¾, 1½ and 3 inches to the foot	$0.80
1856.	Flat Boxwood Scale, 12 inch, beveled, divided on both sides, divisions ⅛, ¼, ½, 1, ⅜, ¾, 1½ and 3 inches to the foot	1.20
1857.	Flat Boxwood Scale, 18 inch, beveled, divided on both sides, divisions ⅛, ¼, ½, 1, ⅜, ¾, 1½ and 3 inches to the foot	2.25
1858.	Flat Boxwood Scale, 24 inch, beveled, divided on both sides, divisions ⅛, ¼, ½, 1, ⅜, ¾, 1½ and 3 inches to the foot	3.00

FLAT WHITE EDGE BOXWOOD SCALES.

		Each.
1860.	Flat Boxwood Scale, 6 inch, beveled, divided on both sides, divisions ⅛, ¼, ½, 1, ⅜, ¾, 1½ and 3 inches to the foot	$1.35
1861.	Flat Boxwood Scale, 12 inch, beveled, divided on both sides, divisions ⅛, ¼, ½, 1, ⅜, ¾, 1½ and 3 inches to the foot	2.00
1862.	Flat Boxwood Scale, 18 inch, beveled, divided on both sides, divisions ⅛, ¼, ½, 1, ⅜, ¾, 1½ and 3 inches to the foot	3.50
1863.	Flat Boxwood Scale, 24 inch, beveled, divided on both sides, divisions ⅛, ¼, ½, 1, ⅜, ¾, 1½ and 3 inches to the foot	4.75

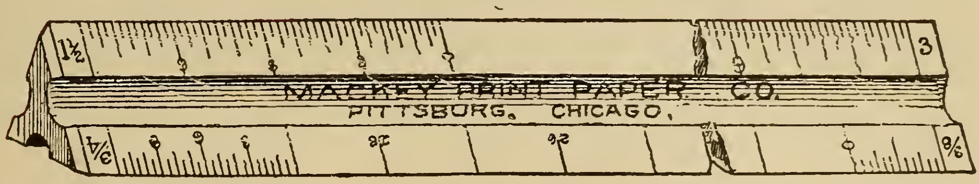
BRISTOL-BOARD OR PAPER SCALES.

		Each.
1865.	Divided in 10, 20, 30, 40, 50 or 60 parts to the inch, 19 inches long	$0.20
	Per set of 6 scales	1.00
1866.	Divided in ⅛, ¼, ⅜, ½, ¾, 1, 1½ or 3 inches to the foot, 19 inches long	.20
	Per set of 8 scales	1.35

TRIANGULAR

BOXWOOD, WHITE EDGE AND METALLIC SCALES.

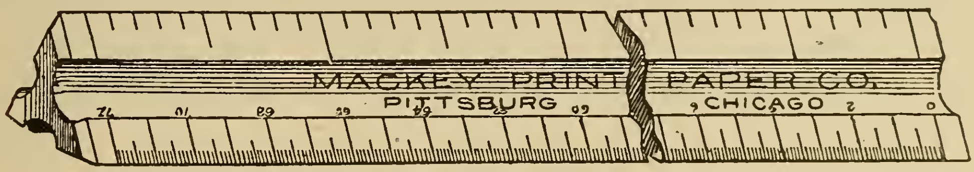
Engine Divided, U. S. Standard.



1870

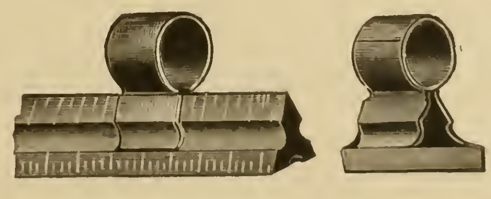
TRIANGULAR SCALES.

		Each.
1870.	Boxwood, 6 inch, div. ¼, ⅛, ½, 1, ⅜, ¾, 1½, 3, $\frac{3}{16}$, $\frac{3}{32}$, $\frac{1}{15}$ inch to the foot	$0.80
1871.	Boxwood, 12 inch, div. same as above	1.50
1872.	" 18 " " " "	2.50
1873.	" 24 " " " "	4.25
1873½.	" White Edge, 12 inch, div. same as above	3.00
1874.	Metallic, 12 inch, div. same as above	3.00



1875

				Each.
1875.	Boxwood, 6 inch, div.	10, 20, 30, 40, 50 and 60	parts to the inch	$0.80
1876.	" 12 " "	10, 20, 30, 40, 50 and 60	" " "	1.50
1877.	" 18 " "	10, 20, 30, 40, 50 and 60	" " "	2.50
1878.	" 24 " "	10, 20, 30, 40, 50 and 60	" " "	4.25
1879.	" 12 " "	20, 30, 40, 50, 60 and 80	" " "	1.50
1880.	" 12 " "	100, 200, 300, 400, 500 and 600	" " foot	1.75
1885.	" White Edge, 12 in., "	10, 20, 30, 40, 50 and 60	" " inch	3.00
1886.	" " 12 in., "	20, 30, 40, 50, 60 and 80	" " "	3.00
1890.	Metallic, 12 inch, div.	10, 20, 30, 40, 50 and 60	" " "	3.00
1891.	" 12 " "	20, 30, 40, 50, 60 and 80	" " "	3.00
1895.	Boxwood, Metric, 20 centimeters			1.65
1896.	" " 30 "			2.00
1897.	" " 50 "			3.25



1898

1898.	Triangular Scale Guard, metal	each, $0.25

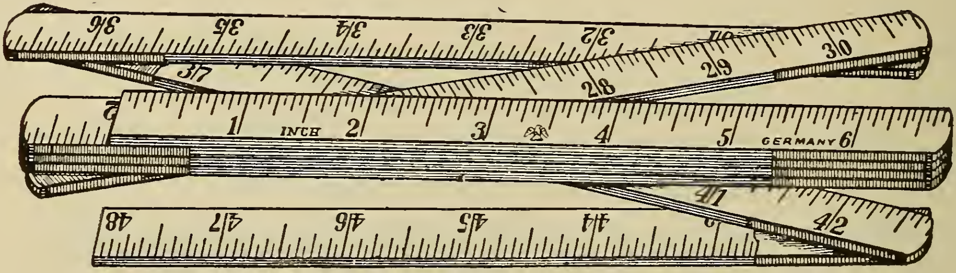
Special Scales made to order. A sketch, showing divisions and length desired should always accompany an order for Special Scales. We require a remittance in advance to cover cost of Special Scales, which may always be figured as costing 25 to 50 cents more than list price of regular scales.

ENGINEERS' AND CONTRACTORS' POCKET RULES.

These rules are made of a flexible and light wood, prepared in a manner to prevent shrinkage, hence they are absolutely accurate. They are constructed much thinner than the old style rules and without the sharp metal edges, therefore they are much more convenient to carry in the pocket.

The "extra flexible" Rules, No. 1904 to 1907 are very light and can be bent so as to measure round objects.

The Rules No. 1908 to 1914 are provided with self-closing springs in the joints, and when opened they hold the Rule in a straight line, thus making them specially useful for measuring vertical and horizontal distances.



1910

All Rules are divided on both sides, and read from right and left.

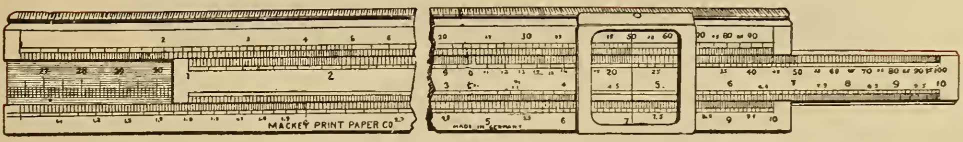
1900.	2 feet,	flexible,	4	folds,	divided	$\frac{1}{16}$	and inches	each, $	.15
1901.	3 "	"	6	"	"	$\frac{1}{16}$	"	"	.20
1902.	4 "	"	8	"	"	$\frac{1}{16}$	"	"	.25
1903.	4 "	"	8	"	"	$\frac{1}{16}$	, inches and metres	"	.25
1904.	2 feet,	extra flexible,	4	folds,	divided	$\frac{1}{16}$	and inches	"	.20
1905.	3 "	" "	6	"	"	$\frac{1}{16}$	"	"	.30
1906.	4 "	" "	8	"	"	$\frac{1}{16}$	"	"	.40
1907.	4 "	" "	8	"	"	$\frac{1}{16}$	, inches and metres	"	.40
1908.	2 feet,	with springs,	4	folds,	divided	$\frac{1}{16}$	and inches	"	.25
1909.	3 "	" "	6	"	"	$\frac{1}{16}$	"	"	.35
1910.	4 "	" "	8	"	"	$\frac{1}{16}$	"	"	.50
1911.	5 "	" "	10	"	"	$\frac{1}{16}$	"	"	.60
1912.	6 "	" "	12	"	"	$\frac{1}{16}$	"	"	.75
1913.	8 "	" "	16	"	"	$\frac{1}{16}$	"	"	1.00
1914.	4 "	" "	8	"	"	$\frac{1}{16}$	, inches and metres	"	.50

FOLDING STEEL POCKET RULES.

INCLUDING LEATHER CASE.

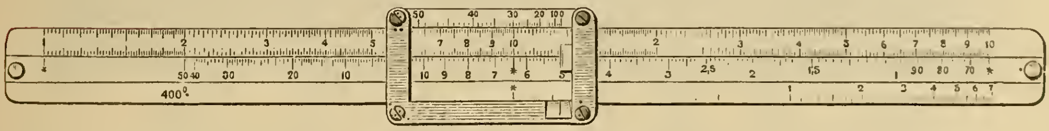
1915.	Steel, 1 foot,	⅜ inch wide,	28 gauge,	4 inch joints,	3 folds	each, $	.25
1916.	" 2 "	⅜ " "	28 "	4 " "	6 "	"	.75
1917.	" 2 "	⅜ " "	26 "	6 " "	4 "	"	.75

CALCULATING RULES.



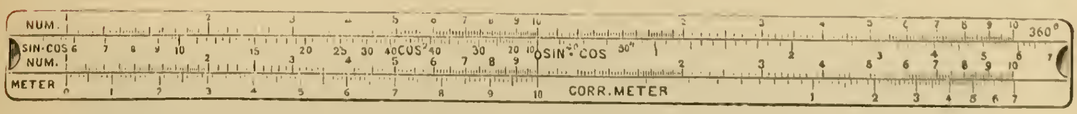
1920

		Each.
1920.	Slide Rule, 10 inch, all Boxwood, polished, glass indicator and directions	$ 3.50
	Directions, when ordered alone	.25
1921.	Slide Rule, 10 inch, all Boxwood, Manheim, glass indicator and directions	3.50
1922.	Slide Rule, 10 inch, Celluloid Facing, Manheim, glass indicator and directions	4.50
1923.	Slide Rule, 20 inch, Celluloid Facing, Manheim, glass indicator and directions	16.50



1925

		Each.
1925.	Topographic Slide Rule for Engineers (System Wild) German Silver, 10 inch, with Indicator 360° or 400°, and directions	$16.50



1926

		Each.
1926.	Topographic Slide Rule for Engineers (System Kern) German Silver, 10 inch, simplified pattern, 360° or 400°. The graduation cos² π is placed on the slide, with directions	$12.50
1927.	Topographic Slide Rule for Engineers (System Kern) German Silver, 10 inch, combination of 360° and 400°, with directions	12.50

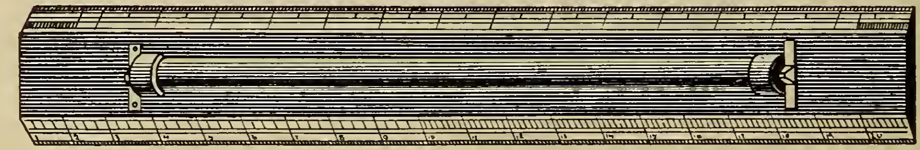
PARALLEL RULES.

1930

No.								Size		Each.
1930.	Ebony	Folding	Parallel	Rules,	Nickel	Plated	Mountings,	6	inch...	$ .25
1931.	“	“	“	“	“	“	“	9	“ ...	.50
1932.	“	“	“	“	“	“	“	12	“ ...	.60
1933.	“	“	“	“	“	“	“	15	“ ...	.85
1934.	“	“	“	“	“	“	“	18	“ ...	1.00
1935.	“	“	“	“	“	“	“	21	“ ...	1.25
1936.	“	“	“	“	“	“	“	24	“ ...	1.60
1937.	Rubber	“	“	“	“	“	“	6	“ ...	.75
1938.	“	“	“	“	“	“	“	9	“ ...	1.00
1939.	“	“	“	“	“	“	“	12	“ ...	1.25
1940.	“	“	“	“	“	“	“	15	“ ...	1.50
1941.	“	“	“	“	“	“	“	18	“ ...	1.75
1942.	“	“	“	“	“	“	“	24	“ ...	2.50
1943.	Celluloid	“	“	“	Brass		“	12	“ ...	1.60
1944.	“	“	“	“	“		“	15	“ ...	2.00
1945.	“	“	“	“	“		“	18	“ ...	2.50

1950

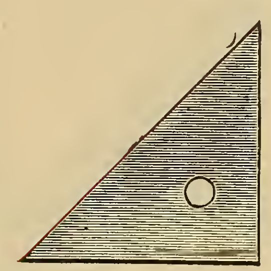
No.								Size		Each.
1950.	Ebony	Rolling	Parallel	Rule,	Nickel	Plated	Mountings,	9	inch......	$2.75
1951.	“	“	“	“	“	“	“	12	“	3.25
1952.	“	“	“	“	“	“	“	15	“	4.00
1953.	“	“	“	“	“	“	“	18	“	5.00
1954.	Hard Rubber	“	“	“	“	“	“	9	“	3.50
1955.	“	“	“	“	“	“	“	12	“	4.25
1956.	“	“	“	“	“	“	“	15	“	5.00
1957.	“	“	“	“	“	“	“	18	“	6.00



1960

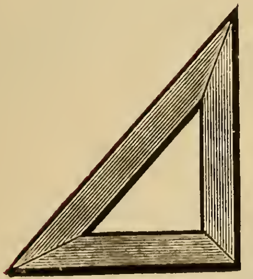
1960.	Ebony Rolling Parallel Rule, Ivory graduated edges, ⅛, ¼, ½, 1 inch to the foot, 12 inch..	each,	$5.00
1961	Same, 15 inch..	“	6.40
1962.	“ 18 “	“	7.50

TRIANGLES.

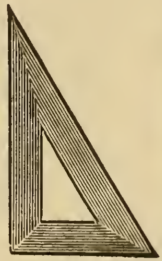

1975

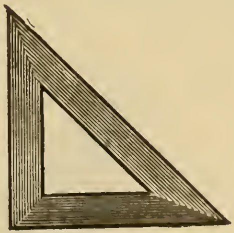
1978

	Inches,	4	5	6	7	8	9	10
1975.	Cherry Triangles, solid, 45°×45°, each,	$0.08	.09	.10	.12	.14	.16	.18
1976.	Maple “ “ 45°×45°, “	.08	.09	.10	.12	.14	.16	.18
1977.	Cherry “ “ 30°×60°, “	.07	.08	.09	.10	.12	.14	.15
1978.	Maple “ “ 30°×60°, “	.07	.08	.09	.10	.12	.14	.15


1980

1982


1981


1979

1979. Cherry Triangles, mortised joints, 45° × 45°

Inches,	4	5	6	7	8	9	10	11	12	13	14	15
Each,	$0.17	.19	.21	.23	.26	.28	.31	.35	.38	.42	.46	.52

1980. Maple Triangles, mortised joints, 45° × 45°

Inches,	4	5	6	7	8	9	10	11	12	13	14	15
Each,	$0.17	.19	.21	.23	.26	.28	.31	.35	.38	.42	.46	.52

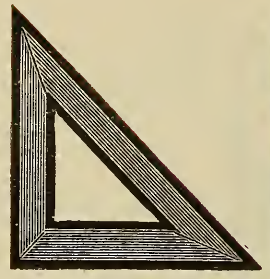
1981. Cherry Triangles, mortised joints, 30° × 60°

Inches,	4	5	6	7	8	9	10	11	12	13	14	15
Each,	$0.15	.17	.19	.21	.23	.25	.28	.30	.34	.38	.41	.45

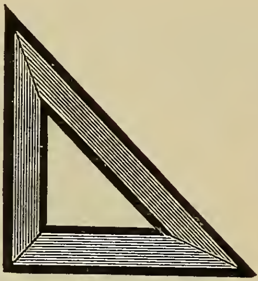
1982. Maple Triangles, mortised joints, 30° × 60°

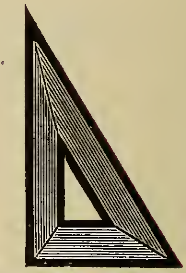
Inches,	4	5	6	7	8	9	10	11	12	13	14	15
Each,	$0.15	.17	.19	.21	.23	.25	.28	.30	.34	.38	.41	.45

TRIANGLES.—CONTINUED.


1983

1984


1985


1986

1983. Pearwood Lined Triangles, mortised joints, 45° × 45°

Inches	6	8	9	12	14
Each	$0.25	.40	.50	.60	.75

1984. Pearwood Lined Triangles, mortised joints, 30° × 60°

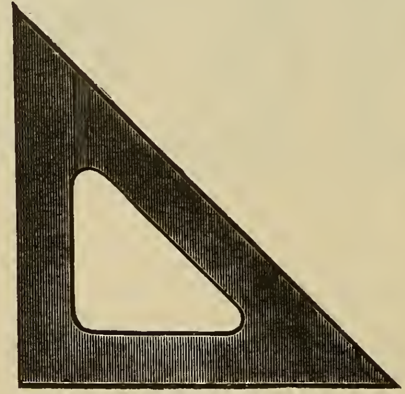
Inches	7	9	11	14	17
Each	$0.25	.40	.50	.60	.75

1985. Mahogany Triangles, Ebony Lined, mortised joints, 45° × 45°

Inches,	5	6	7	8	10	12	14	17
Each,	$0.55	.60	.68	.75	.90	1.00	1.25	1.65

1986. Mahogany Triangles, Ebony Lined, mortised joints, 30° × 60°

Inches	7	8	9	10	12	14	17
Each	$0.60	.68	.75	.80	.90	1.00	1.50


1987

1989

Hard Rubber Triangles, Open Center, 45° × 45°

	Inches	4	5	6	7	8	9	10	11	12	14	16
1987.	Medium Thick, Each	$0.20	.25	.30	.40	.45	.50	.60	.70	.80	1.10	1.50
1988.	Thick, Each				.50	.60	.70	.80	.95	1.15	1.60	2.00

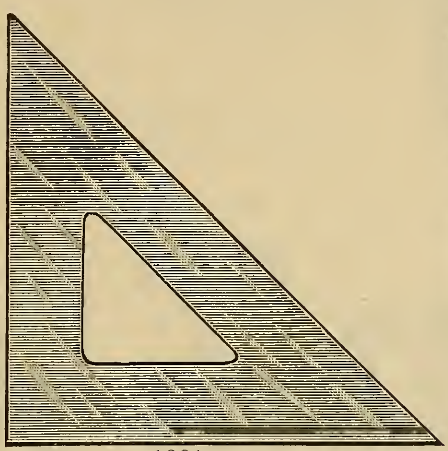
Hard Rubber Triangles, Open Center, 30° × 60°

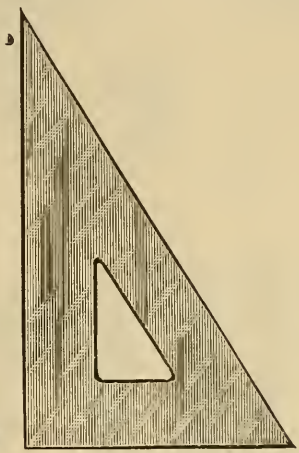
	Inches	4	5	6	7	8	9	10	11	12	13	14	16
1989.	Medium Thick, Each	$0.18	.20	.25	.30	.40	.45	.50	.55	.60	...	.85	1.20
1989½.	Thick, Each				.35	.45	.55	.65	.75	.90	1.00	1.25	1.50

TRIANGLES.—CONTINUED.

1990. Hard Rubber Triangles, Open Center, 22½° × 67½°

Inches	3	4	5	6	7	8	9	10	11	12	14	16
Each	$0.15	.18	.25	.30	.35	.40	.45	.50	.55	.65	.90	1.25


1991


1992

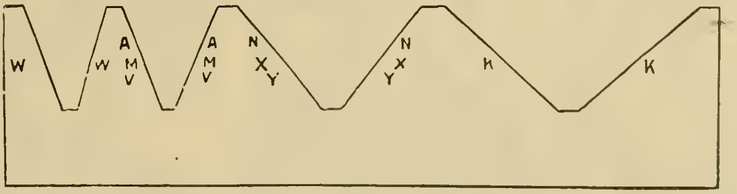
1991. Amber Triangles, Open Center, 45° × 45° — very transparent.

Inches	4	5	6	7	8	9	10	12	14	16	18
Each	$0.35	.45	.55	.65	.75	.90	1.05	1.60	2.00	2.50	3.25

1992. Amber Triangles, Open Center, 30° × 60°

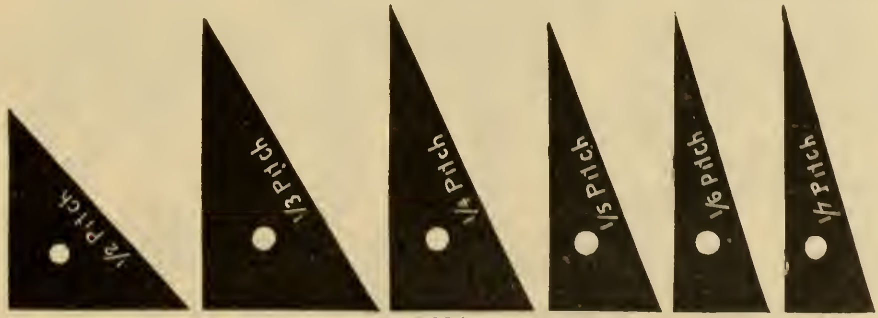
Inches	4	5	6	7	8	9	10	12	14	16	18
Each	$0.25	.35	.40	.45	.55	.60	.70	1.00	1.50	2.00	2.75

LETTERING TEMPLATES.



1993

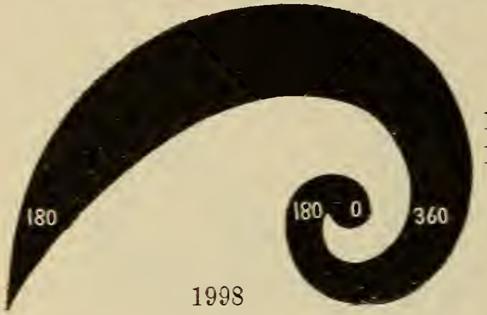
1993.	Amber Lettering Templates, 3 in a set..............................per set,	$2.00
1994.	Lettering Triangles, Hard Rubber, 3½ inch, 3 in a set, per set.......	1.25
1995.	" " Transparent Amber, 3½ inch, 3 in a set, per set,	1.75



1996

1996.	Hard Rubber Triangles for Roof Pitches, per set of 6..........each,	$3.00
1997.	Amber Triangles for Roof Pitches, per set of 6..................... "	5.00

LOGARITHMIC SPIRAL CURVE



1998

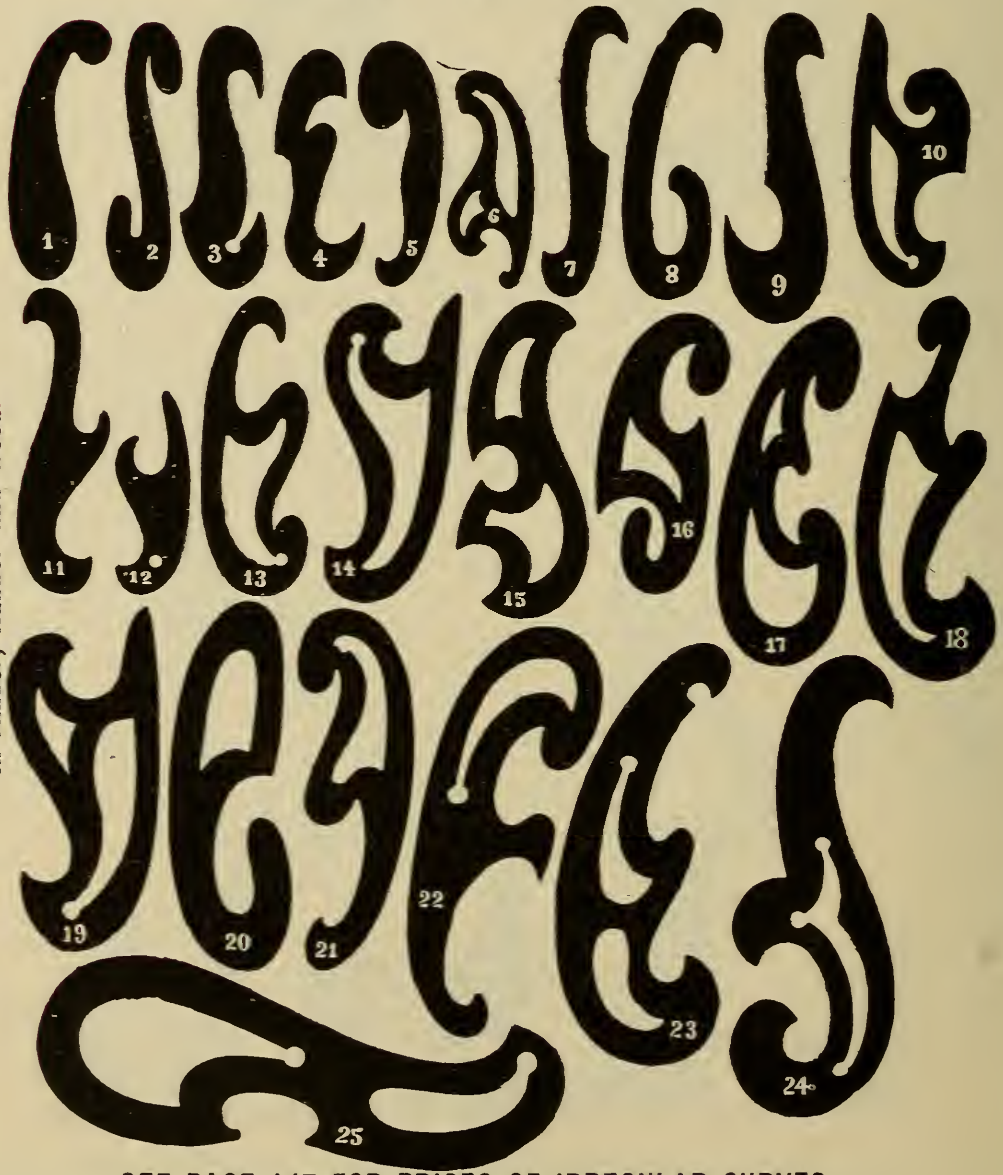
Of Hard Rubber and Transparent Amber.

		Each.
1998.	Hard Rubber Spiral Curve.....	$1.25
1999.	Transparent Amber, Spiral Curve..............................	1.75

The above curve is mathematically correct. All curves, within its size, can be made with it.

IRREGULAR CURVES.

In Amber, Rubber and Wood.



SEE PAGE 147 FOR PRICES OF IRREGULAR CURVES.

IRREGULAR CURVES.

(CONTINUED.)

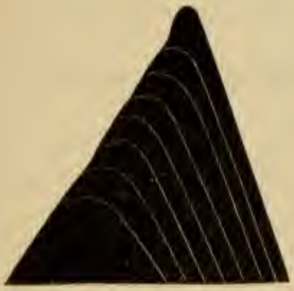
See Page 146 for Illustrations.

	Numbers....	1	2	3	4	5	6	7	8	9
2000.	Pearwood...	$0.12	.15	.15	.18	.18	.20	.20	.20	.20
2001.	Hard Rubber......	.20	.25	.25	.30	.30	.30	.40	.40	.40
2002.	Amber........	.40	.40	.45	.45	.45	.50	.50	.50	.55

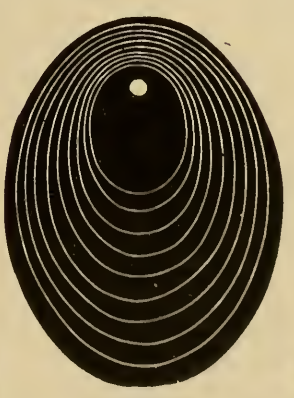
	Numbers....	10	11	12	13	14	15	16	17	18
2000.	Pearwood...	$0.25	.20	.15	.25	.25	.25	.25	.30	.30
2001.	Hard Rubber......	.40	.40	.25	.40	.50	.45	.45	.50	.60
2002.	Amber........	.60	.55	.45	.70	.80	.90	.90	1.10	1.10

	Numbers....	19	20	21	22	23	24	25
2000.	Pearwood...	$0.30	.30	.30	.30	.35	.40	.45
2001.	Hard Rubber......	.60	.50	.60	.60	.75	.90	1.00
2002.	Amber........	1.10	1.10	1.10	1.15	1.20	1.20	1.80

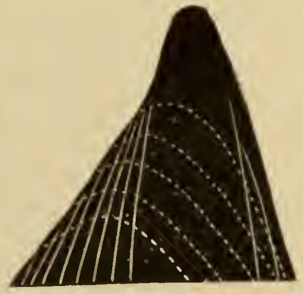
HYPERBOLAS, ELLIPSES AND PARABOLAS.



2003



2005

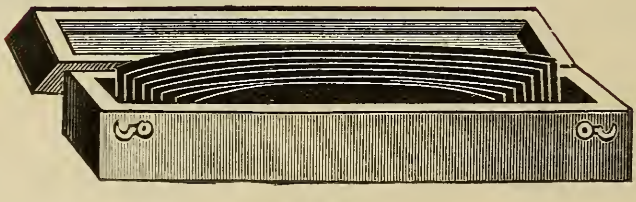


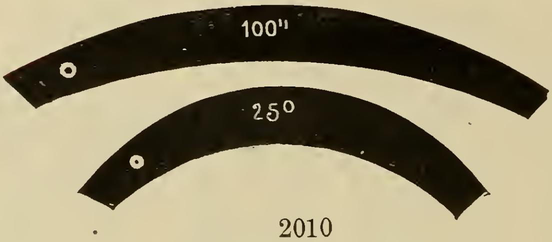
2006

		Wood.	Hard Rubber.	Transparent Amber.
2003.	Hyperbolas, 8 to set, 2 to 5½ inches......	$1.50	2.25	3.50
2004.	Ellipses, 6 " 2 to 4½ "	1.25	1.50	2.50
2005.	" 10 " 1½ to 6 "	2.00	2.75	4.00
2006.	Parabolas, 8 " 1¼ to 5½ "	1.50	2.25	3.50
2007.	" 8 " 3¼ to 14¼ "	3.00	5.00	8.00

RAILROAD CURVES.

In Wooden Boxes.





2010

HARD RUBBER.

		Per Set.
2010.	One set of 10 Curves, viz.: 12, 24, 36, 48, 60, 72, 84, 96, 108, 120 inches radius	$7.00
2011.	One set of 17 Curves, viz.: 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60 inches radius	12.00
2012.	One set of 24 Curves, viz.: 2, 2½, 3, 3½, 4, 4½, 5, 5½, 6, 6½, 7, 7½, 8, 8½, 9, 9½, 10, 12, 14, 16, 18, 20, 22, 24 inches radius	17.00
2013.	One set of 43 Curves, viz.: 3½, 4, 4½, 5, 5½, 6, 6½, 7, 7½, 8, 8½, 9, 9½, 10, 12, 14, 16, 18, 20, 22, 24, 27, 30, 33, 36, 39, 42, 48, 54, 60, 66, 72, 78, 84, 90, 100, 110, 120, 130, 140, 160, 180, 200 inches radius	26.00
2014.	One set of 46 Curves, viz.: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 24, 27, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200 inches radius	28.00
2015.	One set of 100 Curves, varying ½ inch from 2 inches to 3½ inches; and 1 inch from 4 inches to 100 inches	65.00

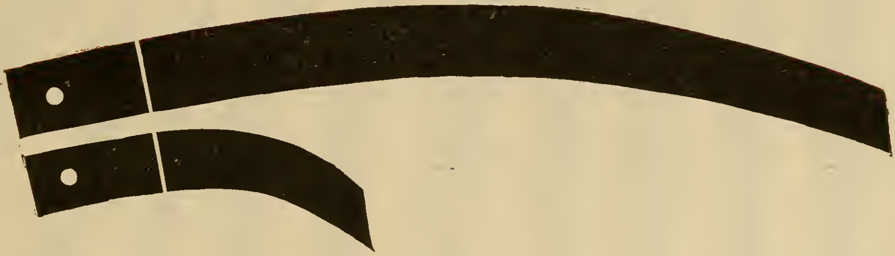
Sets or Single Railroad Curves of any Radius made to order.

PEARWOOD.

		Per Set.
2016.	One set of 10 Curves, viz.: 12, 24, 36, 48, 60, 72, 84, 96, 108, 120 inches radius	$3.50
2017.	One set of 17 Curves, viz.: 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60 inches radius	6.00
2018.	One set of 24 Curves, viz.: 2, 2½, 3, 3½, 4, 4½, 5, 5½, 6, 6½, 7, 7½, 8, 8½, 9, 9½, 10, 12, 14, 16, 18, 20, 22, 24 inches radius	9.00
2019.	One set of 43 Curves, viz.: 3½, 4, 4½, 5, 5½, 6, 6½, 7, 7½, 8, 8½, 9, 9½, 10, 12, 14, 16, 18, 20, 22, 24, 27, 30, 33, 36, 39, 42, 48, 54, 60, 66, 72, 78, 84, 90, 100, 110, 120, 130, 140, 160, 180, 200 inches radius	12.00
2020.	One set of 46 Curves, viz.; 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 24, 27, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200 inches radius	15.00
2021.	One set of 100 Curves, varying ½ inch from 2 inches to 3½ inches; and 1 inch from 4 inches to 100 inches	35.00

RAILROAD CURVES.

(CONTINUED.)



2022

100-FOOT SCALE.

2022. Set of 41 Hard Rubber Railroad Curves, with Tangent, marked in degrees and inches. Made in Hard Rubber only.

0° .30′=114.59 in.
1° = 57.30 “
1° .15′= 45.84 “
1° .30′= 38.20 “
1° .45′= 32.74 “
2° = 28.65 “
2° .15′= 25.47 “
2° .30′= 22.92 “
2° .45′= 20.84 “
3° = 19.10 “
3° .15′= 17.63 “
3° .30′=16.37 in.
3° .45′=15.28 “
4° =14.33 “
4° .15′=13.48 “
4° .30′=12.73 “
4° .45′=12.07 “
5° =11.46 “
5° .15′=10.92 “
5° .30′=10.42 “
5° .45′= 9.97 “
6° = 9.55 “
6° .15′=9.17 in.
6° .30′=8.82 “
6° .45′=8.49 “
7° =8.19 “
7° .15′=7.91 “
7° .30′=7.64 “
7° .45′=7.40 “
8° =7.17 “
8° .15′=6.95 “
8° .30′=6.75 “
8° .45′=6.55 “
9° =6.37 in.
9° .15′=6.20 “
9° .30′=6.04 “
9° .45′=5.88 “
10° =5.74 “
10° .30′=5.48 “
11° =5.22 “
11° .30′=4.99 “

In Wooden Box	per set, $30.00

SEPARATE RAILROAD CURVES.

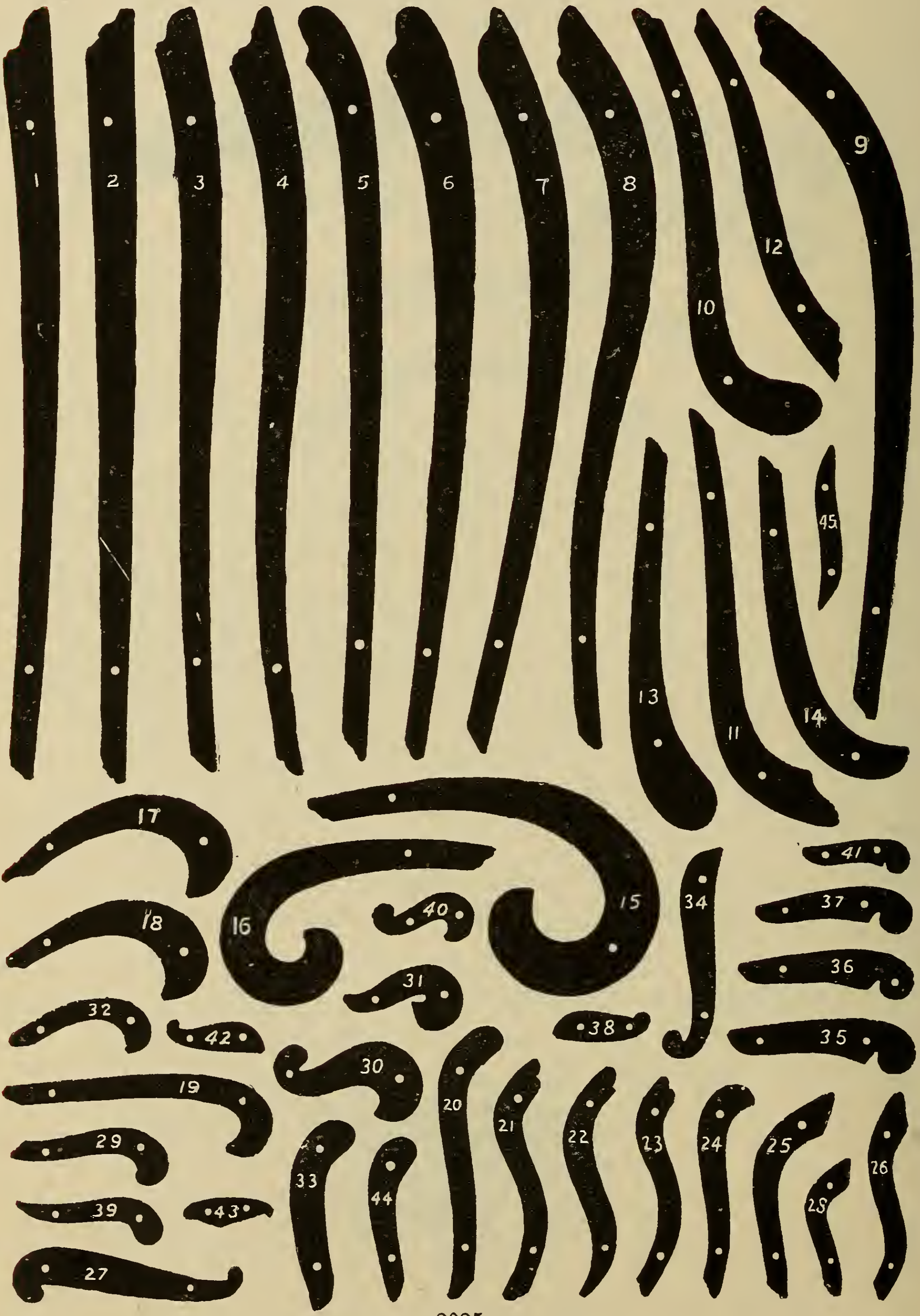
	Each.
Pearwood, as described above...............	$0.45
Hard Rubber, as described above..	.75
“ “ “ with Tangent...............................	.90

2023

		Each.
2023.	Combination Curve, Hard Rubber..	$0.65
2024.	“ “ Transparent Amber..	1.00

COPENHAGEN SHIP CURVES.

In Hard Rubber.



2025

SEE PAGE 151 FOR PRICES OF ABOVE.

COPENHAGEN SHIP CURVES.

(CONTINUED.)

2025. Hard Rubber Single Curves.

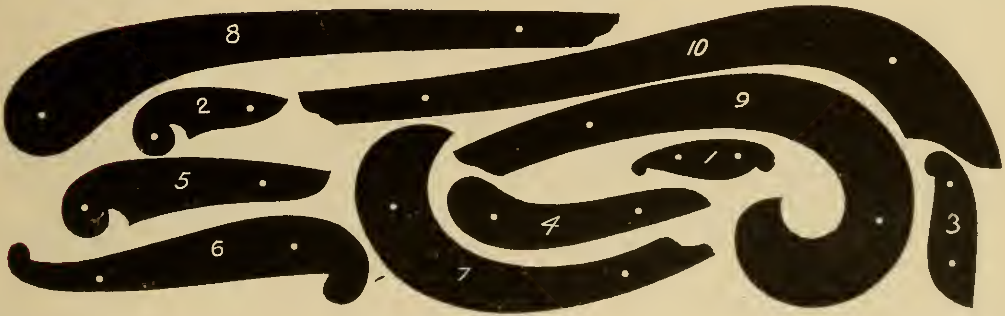
Nos.....	1	2	3	4	5	6	7	8	9	10	11	12
Each...	$1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.10	1.10	.70	.70	.65
Nos............		13	14	15	16	17	18	19	20	21	22	23
Each..........		$0.65	.65	.75	.65	.45	.45	.50	.50	.40	.40	.40
Nos............		24	25	26	27	28	29	30	31	32	33	34
Each..........		.40	.40	.40	.40	.30	.30	.35	.30	.30	.35	.35
Nos............		35	36	37	38	39	40	41	42	43	44	45
Each..........		$0.30	.30	.30	.27	.22	.27	.27	.27	.27	.27	.22

		Per Set.
2026.	45 in set, of Hard Rubber, from No. 1 to No. 45, Complete, in Wooden Box ..	$25.00
2027.	45 " " Wood, " No. 1 to No. 45, " "	16.50

Single Pearwood Ship Curves Furnished to Order.

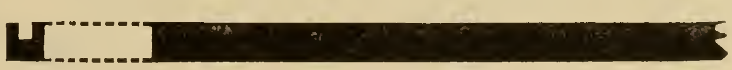
COPENHAGEN SHIP CURVES.

For Mechanical Engineers.



2028.	Per set of 10, of Hard Rubber, in box................................per set,	$3.75
2029.	" 10, of Amber, in box.. "	4.80

WOODEN AND HARD RUBBER SPLINES.

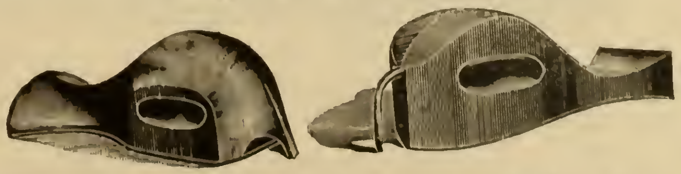


2031

Wooden and Hard Rubber Splines, with Groove.

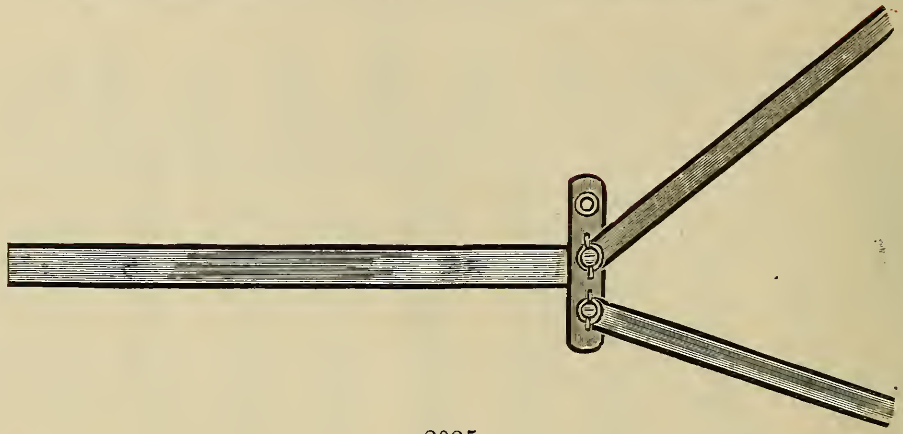
	Length, Inches..................	12	18	24	30	36	42	48	60
2030.	Wooden ....each,	$0.12	.15	.20	.25	.30	.35	.40	.50
2031.	Hard Rubber..................... "	.25	.30	.35	.40	.45	.50	.60	.75

SPLINE WEIGHTS.



2032.	Spline Weight, Japanned Iron, with new style finger............each,	$0.50
2033.	" Lead, with brass finger.......................... ..... "	.85

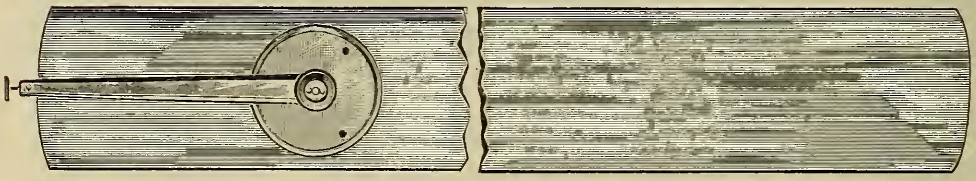
PERSPECTIVE LINEAD.



2035

2035.	Maple Blade,	24 inch,	arms	10	inches	long	each,	$2.85
2036.	"	" 30	"	" 11	"	"	"	3.40
2037.	"	" 36	"	" 12	"	"	"	3.75

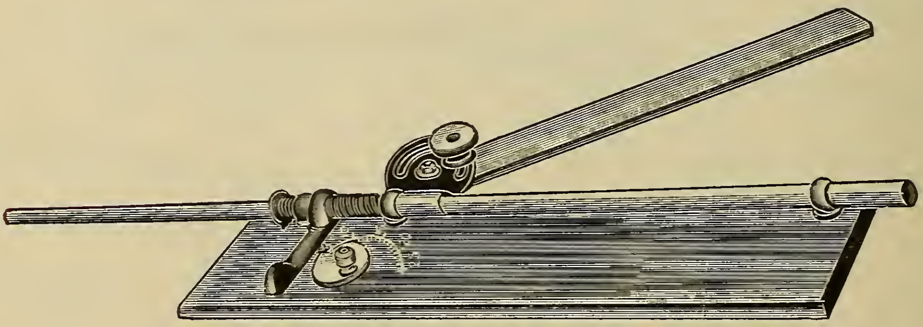
ECCENTRA LINEAD.



2038

2038.	Hard Rubber, German Silver Mountings, 12½ inch long	each, $2.75

STANDARD SECTION LINER.

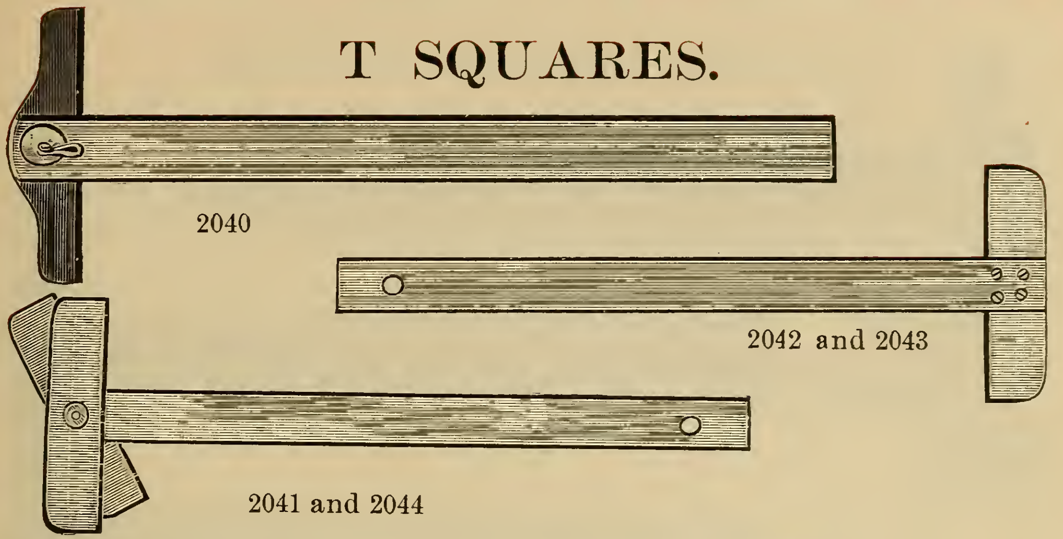


2039

2039.	STANDARD Section Liner, finished in Natural Wood and Nickel Plated Mountings, in Imitation Morocco Case	each, $1.50

The Standard Section Liner is strong, simple and durable, and is the only practical instrument at a reasonable price adapted to the needs of draughtsmen and pupils in Mechanical and Architectural drawing classes. It has great range, allowing spaces from $\frac{1}{1000}$ to ½ inch at any angle without changing position.

T SQUARES.



2040. Cherry Wood, Movable Head, with Nickel Clamping Swivel.

Inches	24	30	36	42	48
Each	$1.15	1.25	1.40	1.60	1.85

2041. Cherry Wood, Movable Head.

Inches	15	18	24	30	36	42	48
Each	$0.70	.75	.95	1.00	1.15	1.35	1.60

2042. Cherry Wood, Fixed Head.

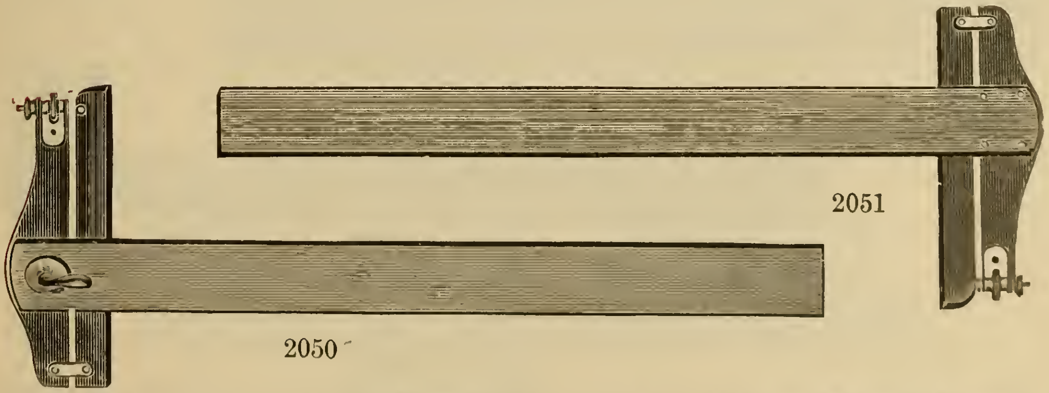
Inches	15	18	24	30	36	42	48
Each	$0.30	.35	.45	.50	.65	.75	1.00

2043. Maple Blade, Walnut Head, Fixed.

Inches	24	30	36	42	48	54
Each	$0.75	.90	1.00	1.15	1.25	1.60

2044. Maple Blade, Walnut Movable Head.

Inches	24	30	36	42	48	54
Each	$1.25	1.40	1.55	1.80	2.00	2.35



2050. Maple Blade, Walnut Movable Head, with Patent Nickel Plated Micrometer Adjustment.

Inches	24	30	36	42	48	54
Each	$1.70	1.85	2.00	2.15	2.25	2.75

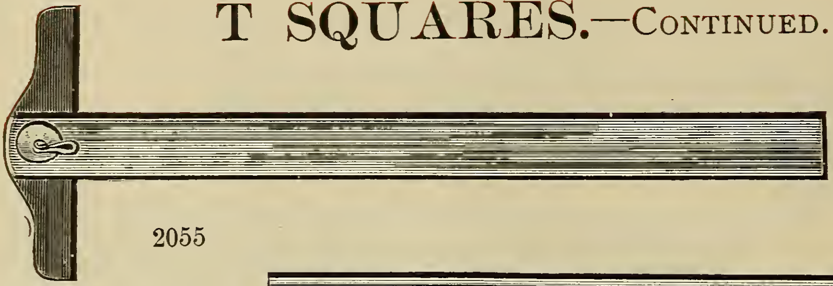
2051. Maple Blade, Walnut Fixed Head, with Patent Nickel Plated Micrometer Adjustment.

Inches	24	30	36	42	48	54
Each	$1.20	1.35	1.50	1.65	1.75	2.25

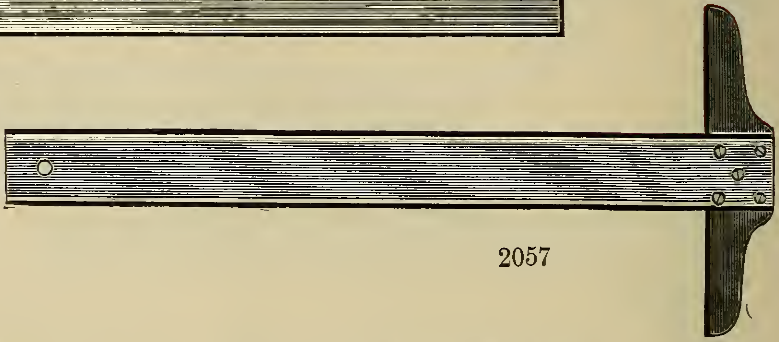
Any kind of a T Square other than those we list will be furnished upon short notice.

SEE PARALLEL RULING DEVICE ON PAGE 163.

T SQUARES.—CONTINUED.



2055



2057

2055. Ash Blade, Maple Lined, Walnut Head, with Patent Nickel Plated Clamping Swivel.

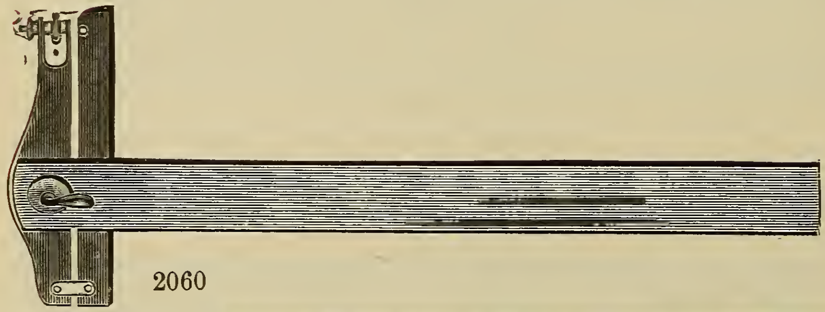
Inches	24	30	36	42	48	54	60	72
Each	$1.50	1.60	1.75	2.00	2.25	2.75	3.50	5.00

2056. Ash Blade, Maple Lined, Walnut Fixed Head, with Nickel Micrometer Adjustment.

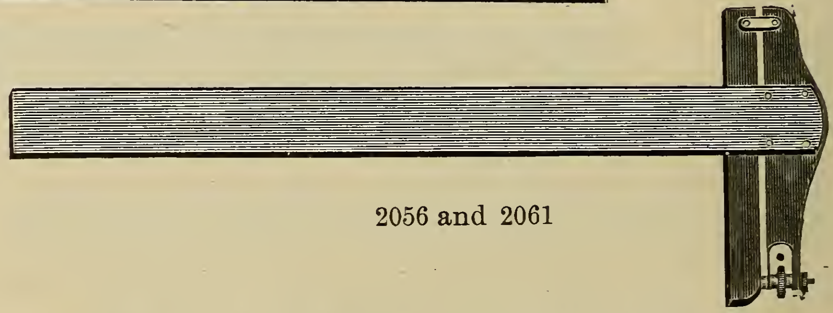
Inches	24	30	36	42	48	54	60	72
Each	$1.60	1.70	1.80	2.00	2.25	2.75	3.50	5.00

2057. Ash Blade, Maple Lined, Walnut Fixed Head.

Inches	24	30	36	42	48	54	60	72
Each	$1.00	1.10	1.25	1.50	1.75	2.25	2.75	4.00



2060



2056 and 2061

2060. Mahogany Blade, Ebony Lined, Movable Head, with Nickel Clamping Swivel and Micrometer Adjustment.

Inches	24	30	36	42	48	54	60
Each	$2.25	2.60	3.00	3.25	3.60	4.25	5.00

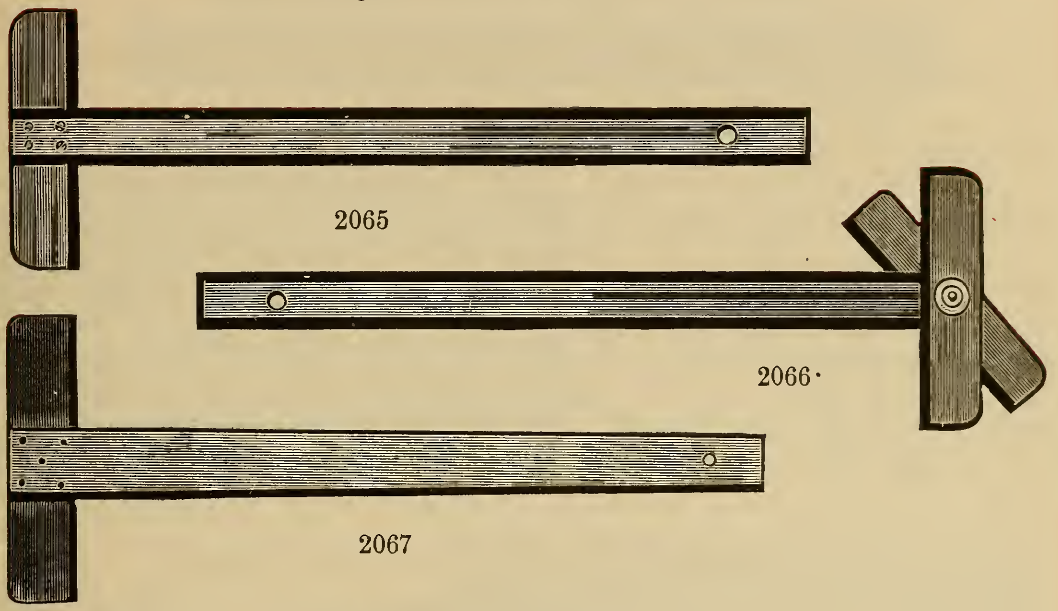
2061. Mahogany Blade, Ebony Lined, Fixed Head, with Nickel Micrometer Adjustment.

Inches	24	30	36	42	48	54	60
Each	$1.80	2.10	2.40	2.60	3.10	3.75	4.50

Any kind of a T Square other than those we list will be furnished upon short notice.

SEE PARALLEL RULING DEVICE ON PAGE 163.

T SQUARES.—CONTINUED.



2065. Mahogany Blade, Ebony Lined, Fixed Head.

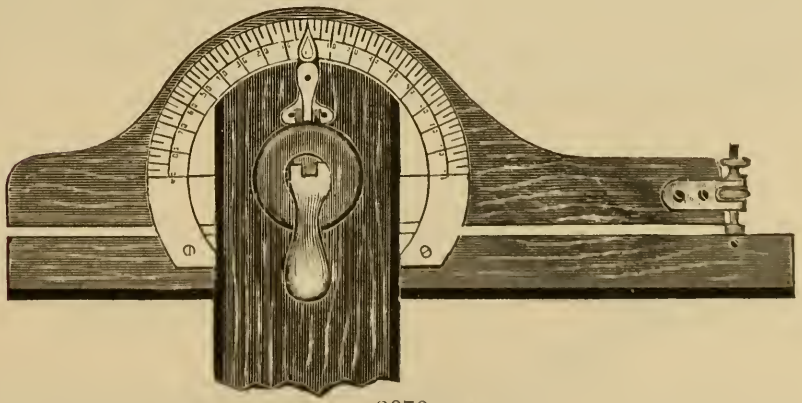
Inches	24	30	36	42	48	54
Each	$1.00	1.20	1.40	1.60	1.85	2.25

2066. Mahogany Blade, Ebony Lined, Movable Head.

Inches	24	30	36	42	48	54
Each	$1.75	2.00	2.25	2.50	2.80	3.25

2067. Mahogany Blade, Tapered, Ebony Lined, Fixed Head.

Inches	30	36	42	48	54
Each	$1.20	1.40	1.60	1.85	2.25



2070

2070. Protractor T Square, Mahogany, Ebony Lined.

Inches	30	36	42
Each	$5.00	6.00	7.00

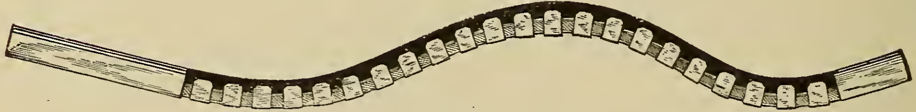
SEE PARALLEL RULING DEVICE ON PAGE 163.

STRAIGHT EDGES.

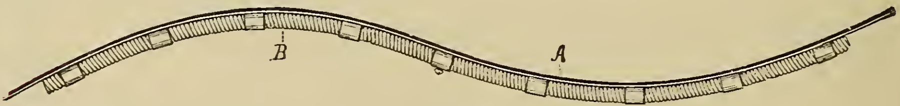
2077

2075.	Cherry Wood, one edge beveled	Inches,	18	24	30	36	42				
		Each,	$0.20	.25	.30	.40	.50				
2076.	Ash, Hardwood Lined	Inches,	24	30	36	42	48	54	60	72	
	One edge beveled	Each,	$0.40	.50	.70	.85	1.15	1.50	2.00	3.00	
2077.	Mahogany, Ebony Lined	Inches,	24	30	36	42	48	54			
	One edge beveled	Each,	$0.55	.70	1.00	1.25	1.60	2.00			
2078.	Hard Rubber	Inches,	12	15	18	24	30	36	42		
	Square edges	Each,	$0.35	.40	.50	.75	1.00	1.50	2.00		
2079.	Steel, one edge beveled	Inches,	15	18	24	30	36	42	48	60	72
	Nickel Plated	Each,	$1.75	2.00	3.00	4.00	5.00	6.50	8.00	11.00	15.00

ADJUSTABLE CURVE RULERS.



2085

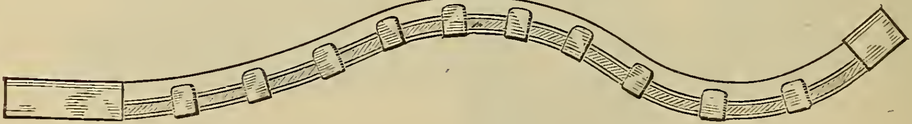


2086

The above tools are intended as a valuable addition to the draftsmen's outfit for drawing irregular curves, each tool combining every form of curve in one, and can be instantly adjusted and retained to any form. The working edge is made rounded, so that by slightly inclining the pencil two or more parallel curves can be drawn without removing the ruler. In using, it is only necessary to bend it to the outline it is desired to draw.

2085. Curve Ruler, 14½ inches long, ruling edge 10 inches............each, $1.87
2086. " " 30 " " " " 30 " .... " 2.87

CHEAPER CONSTRUCTION.



2087

The above cut shows a tool which has been added to the regular line of curve rulers in response to numerous inquiries for a low cost article. In construction it closely resembles the regular 14½ inch tool; it is provided with sliding lead and steel ribbons, and will retain any shape to which it is bent. It is a good and effective tool and will give excellent satisfaction.

2087. Curve Ruler, 12 inches long...each, $ .87
2088, " " 24 " " .... " 1,50

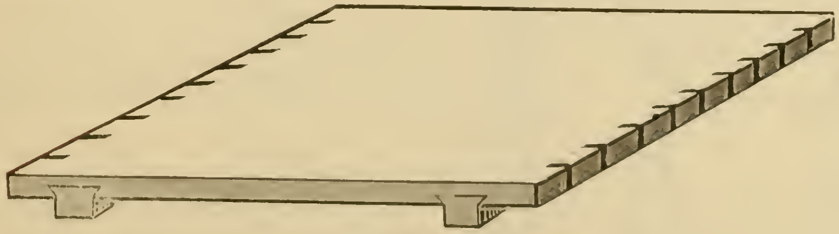
DRAWING BOARDS.

MADE FROM SELECTED AND THOROUGHLY SEASONED PINEWOOD.

2100
Pinewood, ½ inch thick, Dovetailed ⅞ inch Battens.

2101
Pinewood, ⅞ inch thick, with end ledges flushed both sides.

2100.	Sizes, Inches...	12×17	16×21	18×24	19×25	20×26	22×28	23×31
	Each...............	$0.60	.75	.85	.90	1.00	1.15	1.25
2101.	Sizes, Inches...	16×21	18×24	19×25	20×26	22×28	23×31	31×42
	Each...............	$0.90	1.00	1.10	1.20	1.35	1.50	2.25



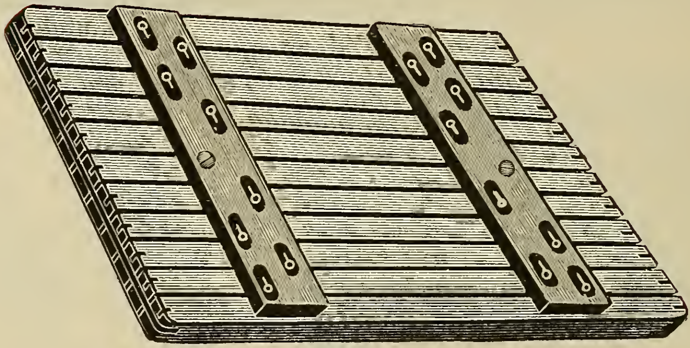
2102

2102. Pinewood, ½ to ⅞ inch thick, with Hardwood Dovetailed Ledges.

Sizes, Inches..........................	20×26	23×31	27×34	31×42	33×55
Each....................................	$1.20	1.80	2.50	3.75	5.75

DRAWING BOARDS.

(CONTINUED.)

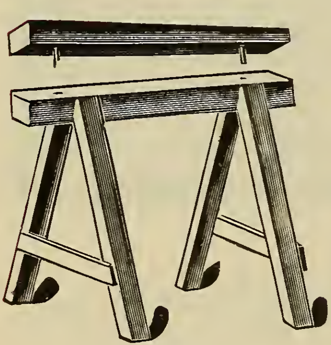


2103

2103. Pinewood, ⅞ inch thick, Hardwood Ledges.

Size.....................Inches,	18 × 24	20 × 26	23 × 31	31 × 42	33 × 55
Each...................	$2.75	3.25	4.00	7.50	10.00

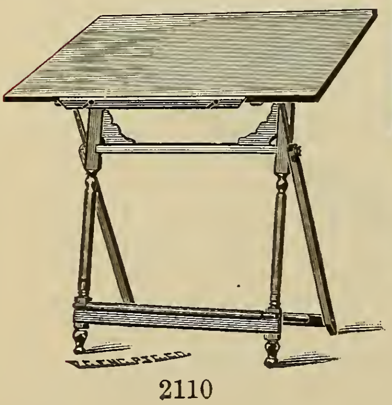
The above boards have grooves sunk in half the thickness of the board, strengthening the edges, and preventing the board from warping.



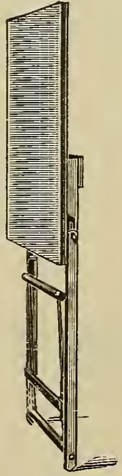
2106

TRESTLES FOR DRAWING BOARDS.

	Per Pair.
2105. Pinewood Horses, 37 inches high, 38 inches long......................................	$5.00
2106. Pinewood Horses, 37 inches high, 38 inches long, with sloping top ledges	5.50



2110



2110
Folded.

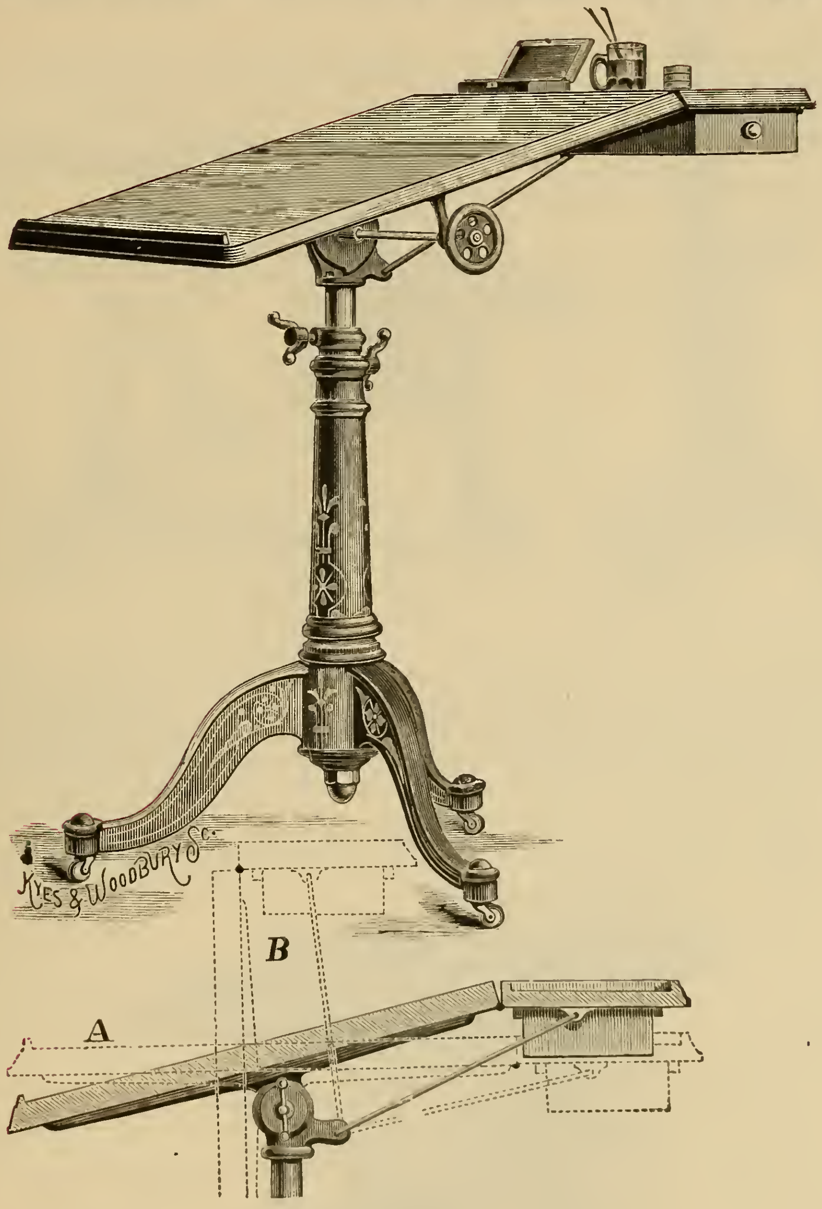
DRAWING TABLES.

This table was specially designed for use either as a drawing or reference table. It is well braced, substantially made, and can be folded and moved without inconvenience.

2110. Folding Drawing Table.

Size, inches...	24×36	32×42	37×48
Height "......	29	38	38
Each............	$3.50	6.00	9.00

"IRON CITY" DRAWING TABLE.



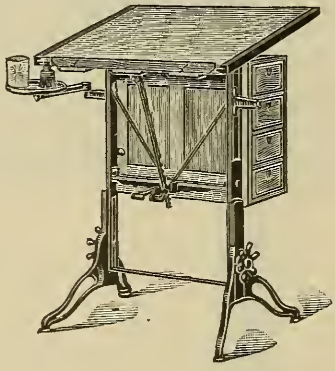
2119

		Each.
2115.	Plain Ash Board, 21½x24 inches	$8.75
2116.	" " 21½x24 " with instrument shelf	10.00
2117.	Black Walnut " 22 x25½ " " "	11.00
2118.	" " 22 x25½ " " " and Drawers, on Castors	13.25
2119.	Same as No. 2118, selected Walnut, Top Polished, Castings Enameled and Ornamented, suitable for home use	16.50

Our "Iron City" Drawing Table can be fixed at any required height, so that it can be used sitting or standing. The top board is adjustable to any desired angle and consequently can be used as drawing table or easel. In the lowest position the table is 30 inches high and may be elevated to 44 inches. The weight of table complete is 55 lbs., and is sufficiently firm to support a drawing board 44 inches square without inconvenience.

“ACME” DRAWING TABLES.

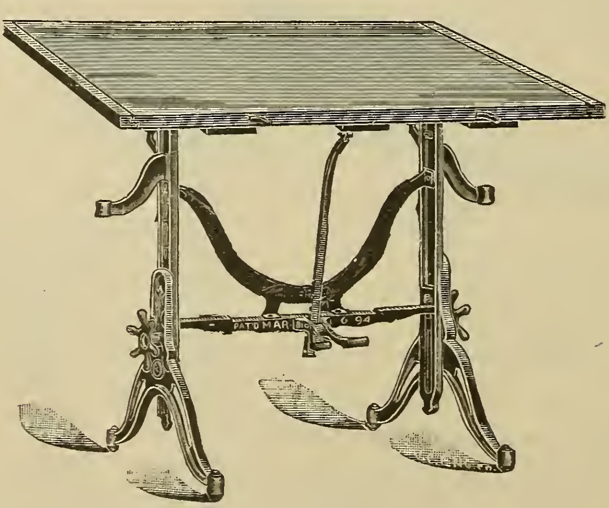
Our “Acme” Drawing Tables are rigid and firm in all positions, and the adjustments are simply and quickly made. The tops are finished drawing boards and constructed in the best possible manner, allowance being made for contraction and expansion. The balance of woodwork is of oak and nicely finished. The frames are of black enamel and bronze trimmings, and the tables are all elegant in appearance.



2121

The above table is of latest design, being on same principle as Nos. 2125 to 2130, but smaller, having been especially designed for school and patent office work. It is very rigid, and can be raised or lowered to any desired height. The polished cabinet of 4 drawers is 18 inches high, 9½ inches wide, and 22 inches long, drawers running full length, locks on each.

		Each.
2120.	“Acme” Table, without cabinet, 24 x 36 inches	$11.00
2121.	“ “ with “ 24 x 36 “	17.50

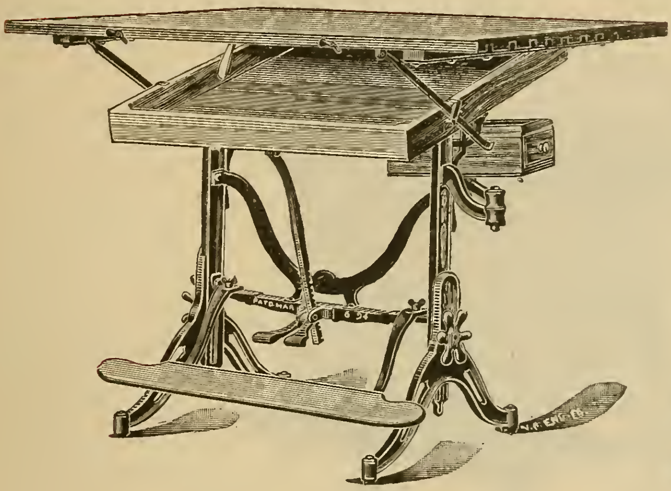


2125

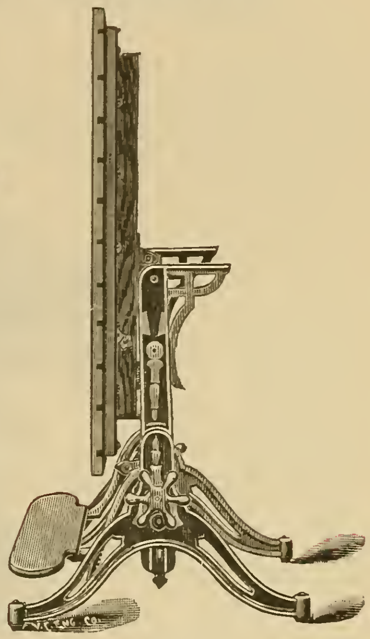
2125. “Acme” Table, plain, without attachment.

Size.....Inches,	32 x 42	37 x 48	44 x 60	40 x 72
Each	$15.00	20.00	25.00	30.00

„ACME" DRAWING TABLES.



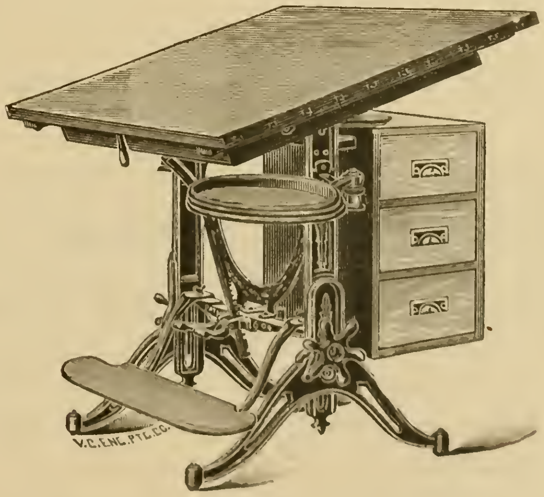
2126



2126, Folded.

2126. "Acme" Drawing Table, with foot rest, swing instrument drawer and sketch box. Table has adjustment for reclining to either side, and top can be raised without raising frame, as shown in cut. It can easily be folded and set to one side when not in use, which is a great convenience.

Size..................................Inches,	32x42	37x48	44x60	40x72
Each...	$25.00	30.00	35.00	40.00

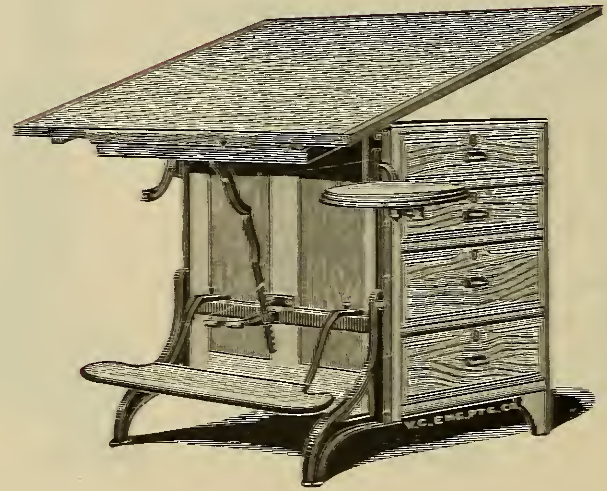

V.C.ENG.PTG.CO.

2128

2128. "Acme" Drawing Table, combining all the advantages of No. 2126, with a Cabinet or Case in the rear of frame and circular swing tray.

Size..................................Inches,	32x42	37x48	44x60	40x72
Each...	$32.50	37.50	42.50	47.50

"ACME" DRAWING TABLES.


V.C. ENG. PTG. CO.

2130

2130. "Acme" Drawing Table.			
Sizes	Inches,	32x42	37x48
Each		$35.00	40.00

SEPARATE PARTS

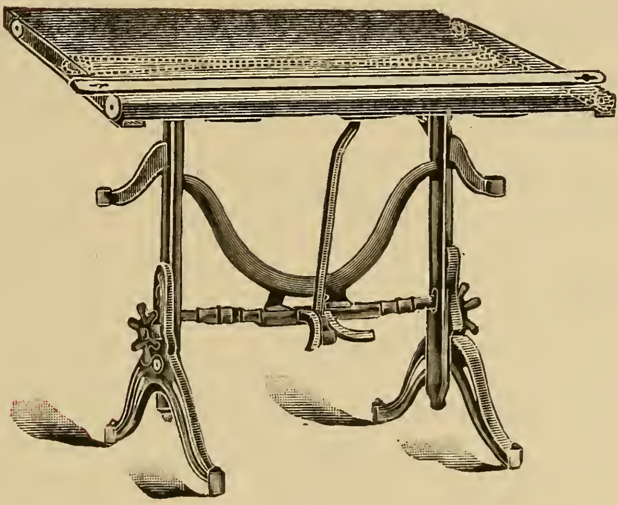
FOR "ACME" DRAWING TABLE.

	Each.
Foot Rest	$1.50
Circular Swing Tray	2.00
Drawer and Swing Tray	3.00
Cabinet 12″x16″x30″, 3 drawers	7.00

If larger sizes of our "Acme" Tables than those listed are wanted, we will be glad to quote prices upon the style and size desired.

"ACME" DRAWING TABLE.

Patent applied for on Parallel Ruling Attachment.



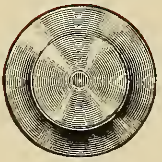
2132

See Page 160 for Description of Stand.

		Each.
2132.	"Acme" Drawing Table, with Board 37x48 inches, having a Mahogany Ebony-lined Parallel Ruler, which is thoroughly reliable and will remain stationary in any given horizontal position, thereby serving as a T square. The Sheaves, Clamps, etc., of Parallel Ruler Attachment are all manufactured with great care from aluminum, and perfect parallel motion is secured, thus greatly facilitating work in the drafting room	$32.00
	Same as above, with Board 44x60 inches	37.00

We can apply this PARALLEL RULER ATTACHMENT to any of our Drawing Tables or Boards, and will be glad to SUBMIT PRICES AND INFORMATION TO THOSE DESIRING SAME. This Attachment is without question the finest and most durable of any on the market, and we heartily recommend its use to the trade in general.

THUMB TACKS.


1188

1180

1155

1148

1196

1197

1199

BRASS AND GERMAN SILVER.

Our line of Brass and German Silver Thumb Tacks is made of the very best material, the pins being screwed in and riveted. Another advantage is that the edges are thin.

		Per Doz.
1148.	Brass, Round Heads, $\frac{6}{16}$ inch diameter	$0.15
1149.	" " " $\frac{7}{16}$ " "	.20
1150.	" " " $\frac{8}{16}$ " "	.25
1152.	" " " $\frac{10}{16}$ " "	.30
1154.	" Beveled " $\frac{6}{16}$ " "	.15
1155.	" " " $\frac{7}{16}$ " "	.20
1156.	" " " $\frac{8}{16}$ " "	.25
1158.	" " " $\frac{10}{16}$ " "	.30
1179.	German Silver, Round Heads, $\frac{7}{16}$ inch diameter	.30
1180.	" " " $\frac{8}{16}$ " "	.40
1181.	" " " $\frac{10}{16}$ " "	.50
1185.	" Beveled " $\frac{7}{16}$ " "	.30
1186.	" " " $\frac{8}{16}$ " "	.40
1188.	" " " $\frac{10}{16}$ " "	.50
1190.	Brass, Round Heads, Special, $\frac{6}{16}$ " "	.10

(T. A.) ALTENEDER THUMB TACKS.

		Per Doz.
1192.	German Silver, Beveled Edges both sides, ⅜ inch diameter	$0.65
1193.	" " " ½ " "	.90
1194.	" " " ⅝ " "	1.10

STEEL THUMB TACKS.

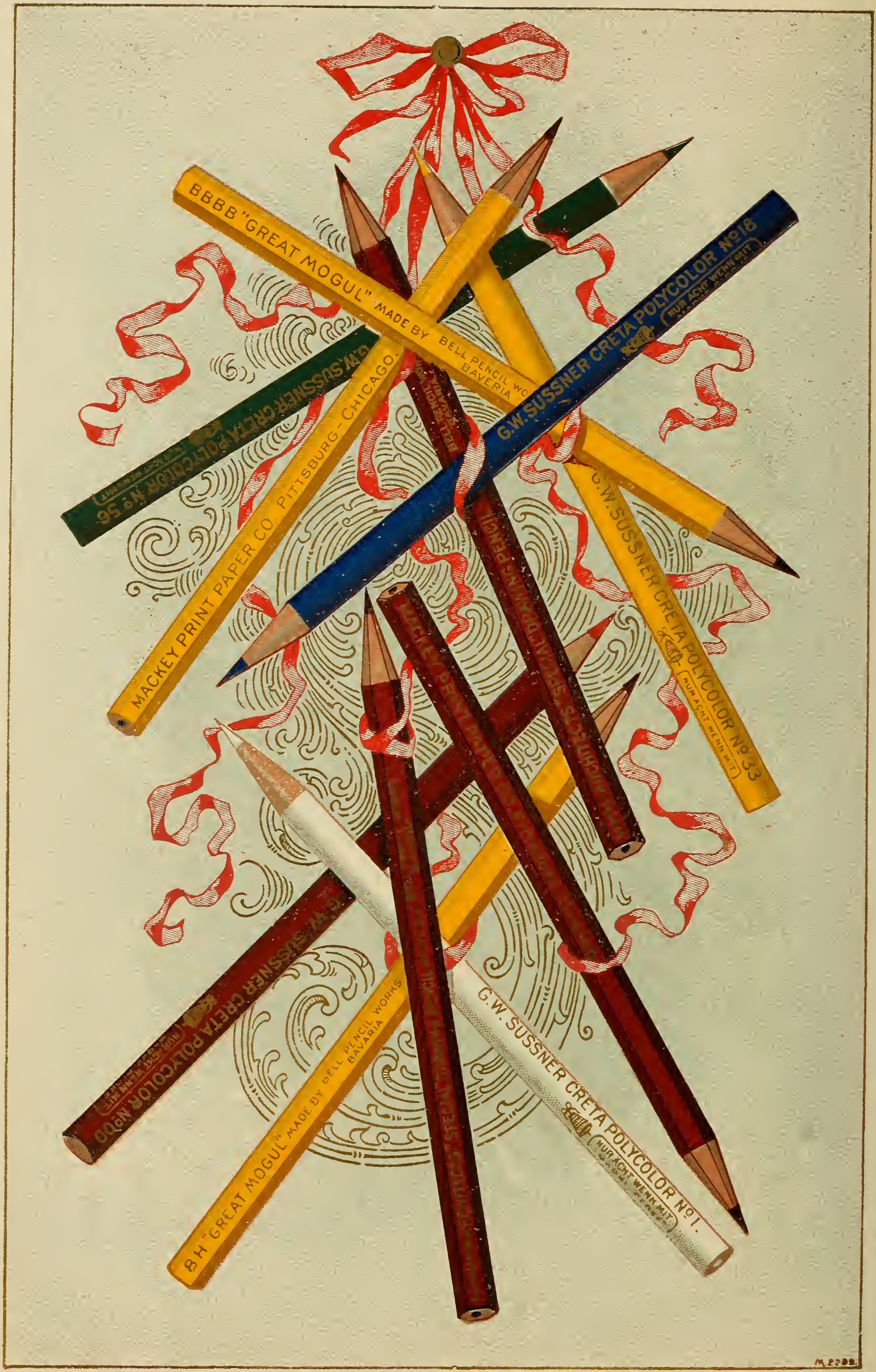
Our Steel Thumb Tacks are stamped out of one piece of nickeled steel, the points on pins being fine ones. These are very durable.

		Per Doz.	Per 100.
1196.	Steel Thumb Tacks, Flat Heads, $\frac{5}{16}$ inch diameter	$.08	.50
1197.	" " " $\frac{6}{16}$ " "	.10	.60
1199.	" " " $\frac{8}{16}$ " "	.12	.75
1296.	" " " $\frac{5}{16}$ " " Metal Cover, Nickeled	.15	.80
1297.	" " " $\frac{6}{16}$ " " " "	.18	1.00
1299.	" " " $\frac{8}{16}$ " " " "	.22	1.35

HORN CENTERS.

1166

		Each.
No. 1165.	Horn Center, Plain, ½ inch diameter	$.015
No. 1166.	" with German Silver Rim, ¾ inch diameter	.50


BBBB "GREAT MOGUL" MADE BY BELL PENCIL WO
BAVERIA
G.W. SUSSNER CRETA POLYCOLOR No 56
NUR ACHT WENN MIT
MACKEY PRINT PAPER CO. PITTSBURG - CHICAGO.
BELL PENCIL W
BAVARIA
G.W. SUSSNER CRETA POLYCOLOR No 18
NUR ACHT WENN MIT
DRAWING PENCIL
G.W. SUSSNER CRETA POLYCOLOR No 33
NUR ACHT WENN MIT
G.W. SUSSNER CRETA POLYCOLOR No 00
NUR ACHT WENN MIT
8H "GREAT MOGUL" MADE BY BELL PENCIL WORKS
BAVARIA
G.W. SUSSNER CRETA POLYCOLOR No 1.
NUR ACHT WENN MIT
M.2788

LEAD PENCILS.

"GREAT MOGUL."

(See Colored Illustration.)

This pencil is manufactured especially for us by one of the most noted pencil manufacturers in the world. It is prepared from the best "Siberian" Graphite, and its lasting qualities are remarkable as compared with all other pencils in use at the present time. Our claim as to the extreme high grade of the "Great Mogul" we consider fully borne out in view of the steadily increasing demand since being introduced.

2140. **"GREAT MOGUL"** Drawing Pencil, Hexagon, Yellow Polished Cedar, deg. 8H, 7H, 6H, 5H, 4H, 3H, 2H, H, F, HB, B, 2B, 3B..Per doz., $1.25

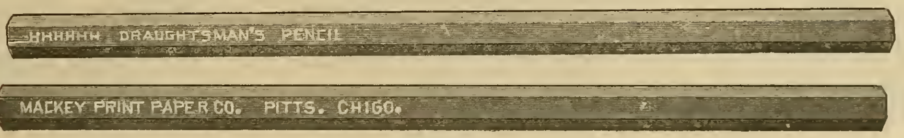
ARCHITECT'S "SPECIAL."

(See Colored Illustration.)

This pencil is one selected by us as being especially adapted to the use of Architects, although it will be found to be a splendid pencil by those desiring a good grade, but who do not care to pay the price of the finer grades.

2141. Mackey Print Paper Co.'s **ARCHITECT'S "SPECIAL"** Drawing Pencil, Hexagon, Red Polished Cedar, degrees 6H, 5H, 4H, 3H, 2H, H, F, HB........................ ....Per doz., $0.70

DRAUGHTSMAN'S PENCIL.


HHHHHH DRAUGHTSMAN'S PENCIL
MACKEY PRINT PAPER CO. PITTS. CHICO.

2142

This pencil is a high grade one, being of much better quality than former standards. A trial will demonstrate its good value.

2142. Mackey Print Paper Co.'s **"DRAUGHTSMAN'S" PENCIL,** Hexagon, Yellow Polished Cedar, degrees 8H, 7H, 6H, 5H, 4H, 3H, 2H, H, F, HB, B, 2B, 3B.. Per doz., $1.00

HARDTMUTH'S

"Koh-i-noor"
The Diploma of Honour Vienna 1873. Great Gold Medal Paris 1878.
KOH-I-NOOR ◆ MADE BY L. & C. HARDTMUTH AT VIENNA
HB ◆ BRITISH GRAPHITE DRAWING PENCIL ◆ Compressed Lead

2145

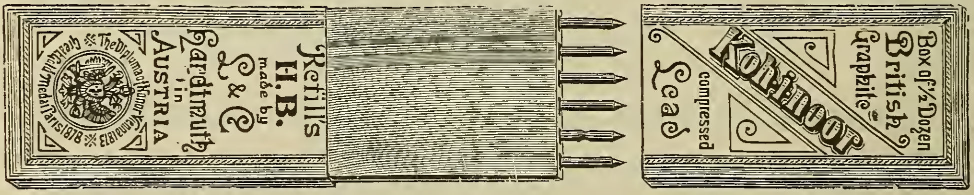
2145. **"KOH-I-NOOR,"** Hexagon, Yellow Polished Cedar, degrees 8H, 7H, 6H, 5H, 4H, 3H, 2H, H, F, HB, B, 2B, 3B..................... Per doz., $1.25

LEAD PENCILS.—(CONTINUED.)

2146

Each.

2146. **"KOH-I-NOOR"** Artist's Pencil, Yellow Handle, with movable lead, $0.25
2147. **"HARDTMUTH'S"** " White Bone " " " " .35



2148

2148. **"KOH-I-NOOR"** Artist's Leads, 6 leads in box, degrees 7H, 6H, 5H, 4H, 3H, 2H, H, HB.. Per box, $0.60

2149. **GERMAN POLYGRADE** Lead Pencil, Hexagon, in Red Polished Cedar, with broad flat leads, especially made for technical and machine drawings, in degrees 6H, 5H, 4H, 3H, 2H, H......Per doz., $1.00

COLORED PENCILS.

See Colored Illustration opposite Page 165.

		Each.	Per Doz.
2150.	**"SUSSNER'S"** Colored Pencils or Wax Crayons, Superfine Quality, made in 60 different colors....................	$0.12	1.25

LIST OF COLORS.

1 White.
2 Light Yellow.
3 Light Blue.
4 Orange.
5 Japan Brown.
6 Sap Green.
7 Ochre.
8 Carmine Rose.
9 Ct. Mort. Brown.
10 Mineral Blue.
11 Light Green.
12 Vermilion.
13 Dark Green.
14 Red Brown.
15 Green Olive.
16 Red Violet.
17 Japan Red.
18 Ultramarine.
19 Scarlet.
20 Black.
21 Sepia.
22 Olive.
23 Brick Red.
24 Dark Violet.
25 Raw Sienna.
26 Dark Blue.
27 Green Yellow.
28 Brown Olive.
29 Umber.
30 Dark Olive.
31 Sepia Brown.
32 Red Ochre.
33 Dark Yellow.
34 Blue Green.
35 Blue Violet.
36 Dark Gray.
37 Light Gray.
38 Mineral Blue.
39 Olive Green.
40 Light Red.
41 Light Carnation.
42 Light Ochre.
43 Light Rose.
44 Dark Carnation.
45 Mineral Green.
46 Dark Umber.
47 Yellow.
49 Finest Carmine.
53 Deep Rose.
54 Madder Lake.
56 Silk Green.
57 Viridian.
59 Mauve.
61 Prussian Blue.
63 Chrome Yellow.
64 Canary.
68 Cobalt Blue.
69 Imperial Blue.
00 Scarlet Lake.
0 Carmine.

COLORED PENCILS.

(CONTINUED.)

		Each.	Per Doz.
2151.	Colored Pencils, Red and Blue, Combined, 8¾ inches long	$0.12	1.25
2152.	" " " " " 7¼ " "	.10	1.00
2153.	" White Lead	.12	1.25
2154.	" Red, Blue or Green	.10	1.00

COLORED PENCILS, IN BOXES.

2160. **"SUSSNER'S"** Colored Pencils or Wax Crayons, Superfine Quality, with assorted shades, in boxes.

Colors	6	12	18	24
Per Box	$0.75	1.25	1.75	2.25

ENGINEERS' AND SURVEYORS' CRAYONS.

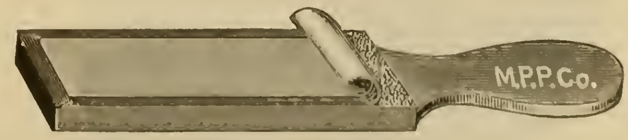
For Marking Stakes, Etc.

MAKES A WATERPROOF MARK.

2165

		Each.	Per Doz.
2165.	Engineers' and Surveyors' Crayons, Hexagon, Red or Blue, 4½ inches long	$0.10	1.00
2166.	Engineers' and Surveyors' Crayons, Round, Red or Blue, 3½ inches long	.08	.75
2167.	Oil Crayons, Round, 6¼ inches long and about ¼ in. diameter, in Black, Blue, Red, Brown, Green, Purple or Yellow	.08	.75
2168.	Dixon's Metal Workers' Crayon, Hexagon	.08	.75

PENCIL POINTERS.



2169

		Each.
2169.	Sand Paper Pointer, with Handle, size 1¼x6 inches	$0.15
2169A.	Fine English Steel Erasers, Coco Handle	.40
2169B.	" " White "	.60
2169C.	" " Black " double edged, Combined Eraser and Knife	.75

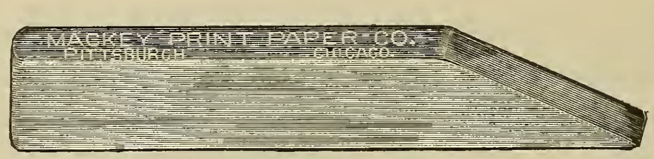
RUBBER ERASERS.

The following line of Rubber Erasers, bearing our name. were selected with the utmost care, quality being considered above everything else. A trial will convince anyone of their high grade.

2175

2175. Mackey Print Paper Co.'s Artists' Rubber, Flat, 8 sizes.

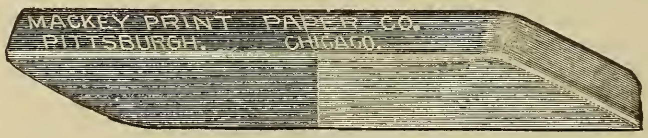
Pieces to the Pound	60	40	30	20	16	12	8	4
Per piece	$0.05	.06	.08	.12	.15	.18	.25	.50
" pound								$1.80



2176

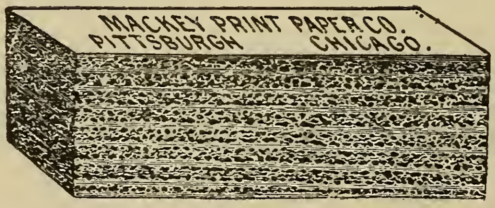
2176. Mackey Print Paper Co.'s Artists' Rubber, Oblong, 5 sizes.

Pieces to the pound	60	40	30	20	12
Per piece	$0.05	.06	.08	.12	.18
" pound					$1.80


MACKEY PRINT PAPER CO.
PITTSBURGH. CHICAGO.

2177

	Per Doz.	Each.
2177. Mackey Print Paper Co.'s "Union" Rubber, a combination Ink and Pencil Eraser	$1.25	.12


MACKEY PRINT PAPER CO.
PITTSBURGH CHICAGO.

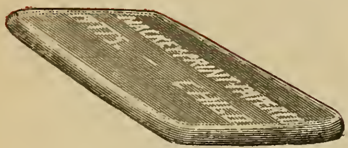
2178

2178. Multiplex Rubber, a splendid Pencil Eraser.

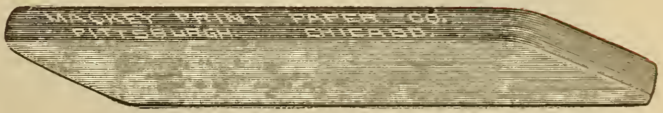
Pieces to the pound	60	30	20	12	8	6	4
Per piece	$0.05	.10	.15	.25	.40	.50	.75
" pound							$3.00

RUBBER ERASERS.

(CONTINUED.)



2180



2181

		Each.	Per Doz.
2180.	Mackey Print Paper Co.'s Ink Erasers, Flat, 1½x1x3/16 inch	$0.05	0.50
2181.	" " " " Typewriter (or Ink) Erasers, Oblong, 2⅝x½x¼ inch	.06	.60
2182.	Mackey Print Paper Co.'s Typewriter (or Ink) Erasers, Oblong, 3¼x⅝x⅜ inch	.10	1.00

A. W. FABER'S RUBBER ERASERS.

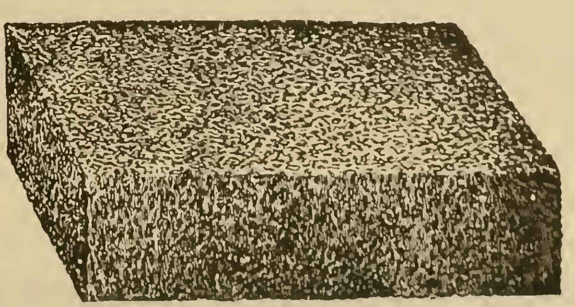
2183. Artists' Rubber, in 7 sizes.

Pieces to the Pound	60	40	30	20	12	8	4
Per piece	$0.05	.06	.08	.12	.18	.25	.50
" pound							$1.80

		Each.	Per Doz.
2184.	FABER'S Ink Eraser, Small	$0.05	0.50
2185.	" " Large	.10	1.00
2186.	" " Extra Large	.18	1.80
2187.	" Union Eraser, Pencil and Ink	.08	.75
2188.	" Ink and Pencil Eraser, in Wood	.15	
2189.	" " " " Mammoth	.25	

SPONGE RUBBER.

Plain or Solid Back, for Cleaning Drawings.



2190

		Each.
2190.	Sponge Rubber, 2x3x1 inch	$0.40
2191.	" 3x4x1 "	.75
2192.	" 4x6x1 "	1.50
2193.	" with Solid Back, 1¾x2½x⅝ inch	.25
2194.	" " " 2 x4 x1 "	.60
2195.	" " " 4 x6 x1 "	1.80
2196.	Kneaded Rubber, for cleaning drawings and tracings. This rubber can be kneaded into any desirable shape ... Per doz.,	1.25

ERASING SHIELDS.

2200

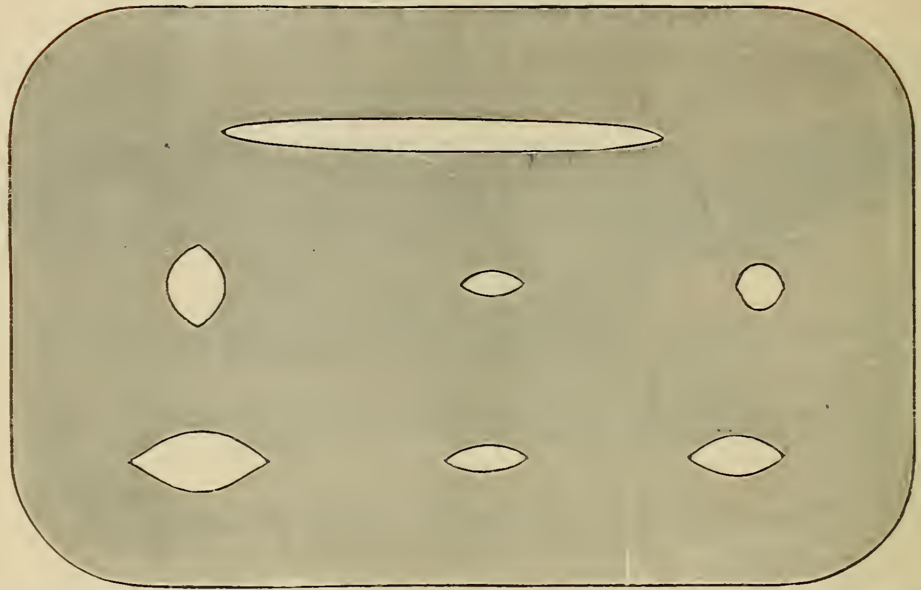


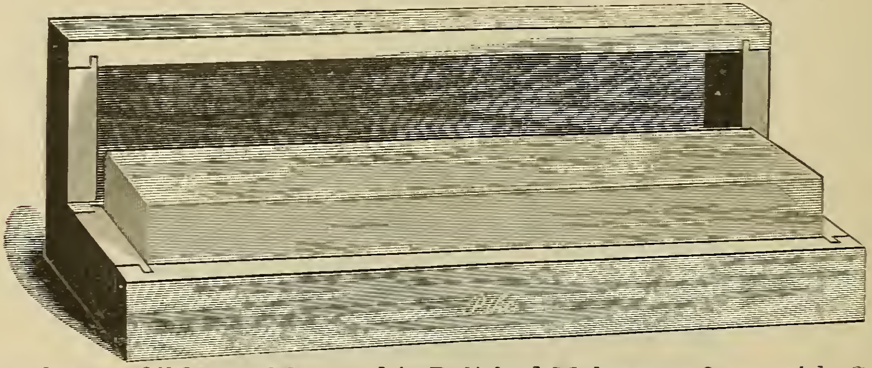
Illustration Full Size.

2200. Nickel Plated Erasing Shield.....................Each, $0.20. Per Doz., $2.00

These Nickeled Shields will soon be found on every drafting table. being a perfect protection to intricate drawings when erasures are being made. All who have used them consider them indispensable.

ARKANSAS OIL STONES.

2205



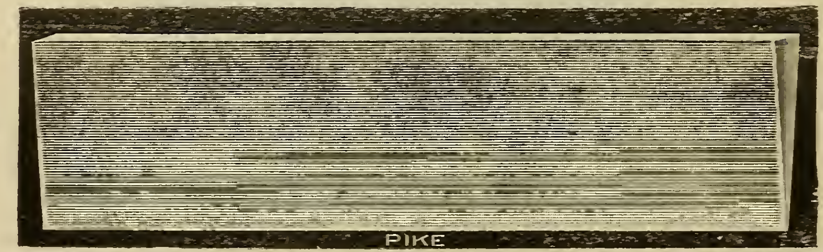
2205. Arkansas Oil Stone, Mounted in Polished Mahogany Case, with Cover.

Sizes..........Inches,	3½x1	4x1½	5x2
Each	$0.75	1.20	2.00

2206. Arkansas Oil Stone, mounted on Mahogany Wood, with Handles; size 4x1 inch, each, $0.75

2207. Arkansas Oil Stone, unmounted, 3 to 4½ inches long, 1 to 1¼ inches wide, ⅜ to ⅝ inch thick..........each, from $0.30 to 0.50

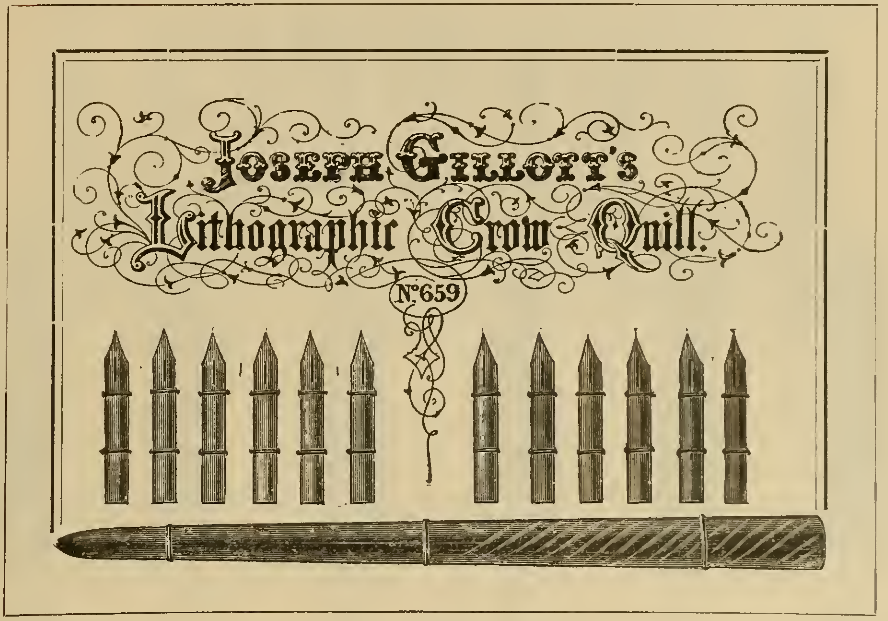
2208



2208. Arkansas Oil Stone, Knife Blade Shape, Sharp Edge, 3 to 4½ inches long, ¾ to 1 inch wide, ⅛ to ¼ inch thick..........each, $0.50

STEEL PENS

FOR DRAUGHTSMEN AND LITHOGRAPHERS.



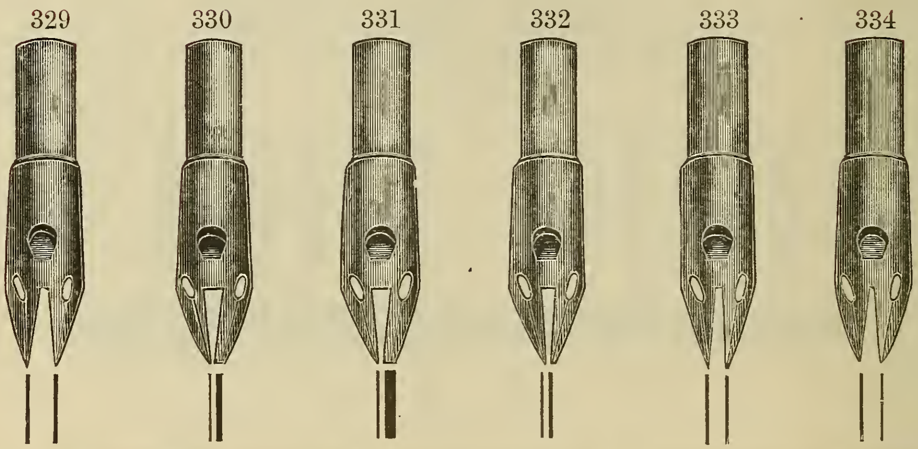
2224

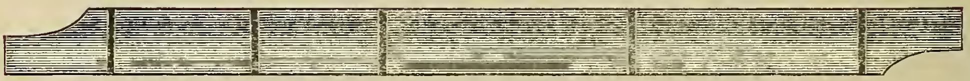
	Gillott's No.		Each.	Per Doz.	Gross.
2210.	170.	Gillott's Mapping, Loose, in Gross Boxes......	$0.02	.10	1.05
2211.	170.	" " ½ "			1.15
2212.	170.	" on Card, with Holder..........		.25	2.25
2213.	291.	" Loose, in Gross Boxes..........	.05	.50	5.00
2214.	291.	" on Card, with Holder..........		.60	6.50
2215.	303.	" Extra Fine, Loose, in Gross Boxes	.02	.15	1.40
2216.	303.	Gillott's Mapping, Extra Fine, Loose, in ½ Gross Boxes..			1.50
2217.	303.	Gillott's Mapping, Extra Fine, on Card, with Holder		.30	2.75
2218.	404.	" with Bead, fine Point, Loose, in Gross Boxes..	.01	.10	.75
2219.	290.	Gillott's Lithographic, Loose in Gross Boxes.....	.05	.50	5.00
2220.	290.	" " on Card, with Holder....		.60	6.50
2221.	1000.	" Drawing, Superfine, on Card, with Holder..	.10	1.10	12.70
2222.	659.	Gillott's Crow Quill, Loose, in Gross Boxes.....	.05	.50	5.00
2223.	659.	" " " ¼ "			5.50
2224.	659.	" " on Card, with Holder........		.60	6.50
2225.	837.	" " Long Shoulder, on Card, with Holder..		.75	8.25
2226.	850.	Gillott's Crow Quill, Long Shoulder, on Card, with Holder...........		.75	8.25
2230.		Blanzy, Poure & Co.'s Crow Quill, on Card, Holder with each Pen..	.03	.30	3.00
2231.		Blanzy, Poure & Co.'s Crow Quill, Loose, in Gross Boxes,	.02	.20	2.00

PENHOLDERS.

		Each.	Per Doz.
2235.	Penholder, Ebony, for Crow Quills 659 and 850	$0.10	$1.00
2236.	" Cedar, for Mapping Pens 170, 290 and 291	.05	.25
2237.	" Rosewood, German Silver Tip, Regular Length, for Pens 303, 404, 292, etc	.05	.50
2238.	" Rosewood, same as No. 2237, only longer	.06	.60

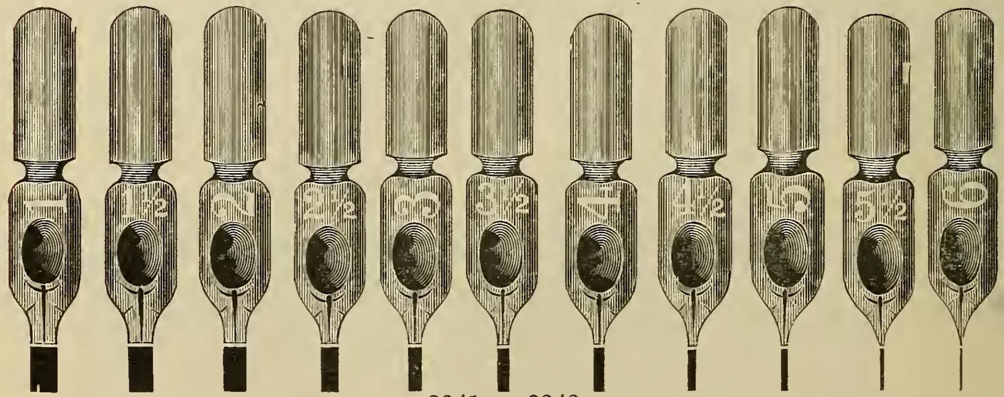
ROAD PENS.




2240

2240. French Road Pens, Nos. 329, 330, 331, 332, 333 or 334, on Card with Holder...Per doz., $2.00

ROUND WRITING PENS.

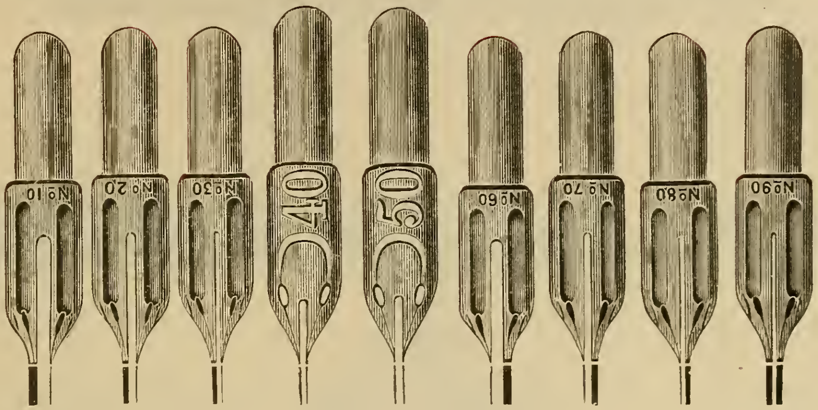


2241 — 2242

2241. Pens, Single Pointed, Nos. 1, 1½, 2, 2½, 3, 3½, 4, 4½, 5, 5½ or 6, any one number ....Per gross, $0.85

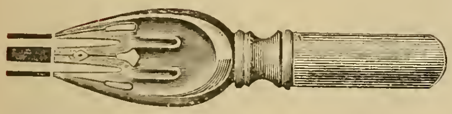
2242. Pens, same.. " ¼ " .25

ROUND WRITING PENS.--CONTINUED.

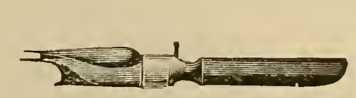


2243 — 2244

2243. Pens, Double Pointed, Nos. 10, 20, 30, 40, 50, 60, 70, 80
or 90, any one number..Per ¼ gross, $0.65
2244. Pens, same.. " dozen, .35



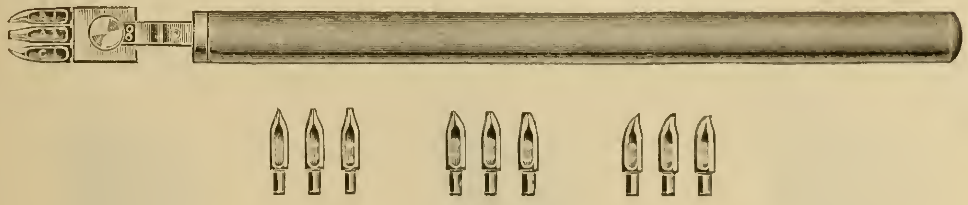
2245



2247
ATTACHED.

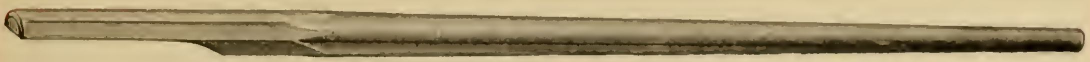
2247

2245. Three Pointed Pen, for ornamental work ....Per doz., $0.50
2246. Sample assortment of Single and Double Pens, per box of 25 pens, .35
2247. Ink Holder, for Single and Double Pointed Pens " 10 " .30



2248 and 2249

2248. Writing Instrument for Round Writing and Fancy Script,
Complete with 9 minute pens.......................................each, $1.00
2249. Minute Pens for No. 2248..Per doz., .75

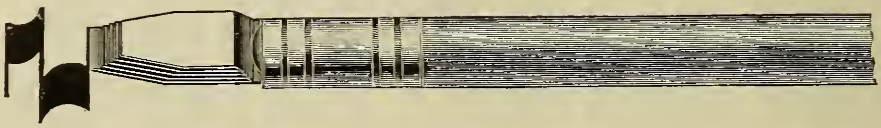


2250

2250. Penholders for Round Writing Pens........... ....each, $0.10

2251

2251. Penholder, Double Ends, for Round Writing Pens........................ $0.10



2252

2252. Parcel Pen, in different widths, for Bold and Large Lettering.

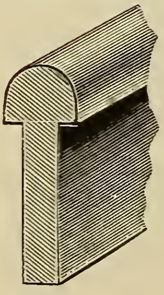
Numbers...	131	133	135	137
Widths...	1/16	⅛	¼	⅜
Each	$0.25			

METHODICAL TEXT AND COPY BOOKS.

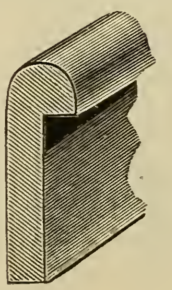
For Round Writing.

		Per Copy.
2253.	Methodical Text Book on Round Writing, including an assortment of 25 Single and Double Pointed Pens............................	$1.00
2254.	Methodical Text Book on Round Writing, without Pens...............	.65
2255.	Copy Book, without Instructions (School Edition) Nos. 1, 2, 3, 4 and 5, including an assortment of 25 Pens.......	.70
2256.	Copy Book, without Pens...........	.35

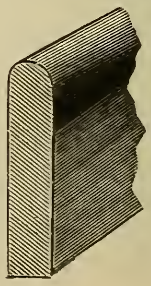
BEAM COMPASS BARS.



2257



2258



2259

	Size........................ .....Inches,	24	30	36	42	48	60
2257.	Hardwood................................	$.35	.40	.45	.55	.65	.75
2258.	"	.30	.35	.40	.45	.50	.65
2259.	"	.20	.25	.30	.35	.40	.50

LIQUID DRAWING INKS.

MACKEY PRINT PAPER CO.'S

"COCHIN" DRAWING INK.

WATERPROOF.

2275

Our "Cochin" Drawing Ink is waterproof and superior to all others in richness and density. The black is a true one, while the colors are all brilliant. It flows very freely and is absolutely imperishable. Our small bottles contain ¾ of an ounce, and the cork of each has a filler attached. The following is a list of our colors:

Black,
Carmine,
Scarlet,
Vermilion,
Brick Red,
Orange,
Yellow,
Lemon,
Blue,
Indigo,
Violet,
Brown,
Green,
Ultramarine,
Meadow Green.

2275.	"Cochin" Drawing Ink, small bottle	each, 25c., per doz.	$2.75
2276.	" " Half-Pint	Each	2.00
2277.	" " Pint	"	3.75
2278.	" " Quart	"	7.00

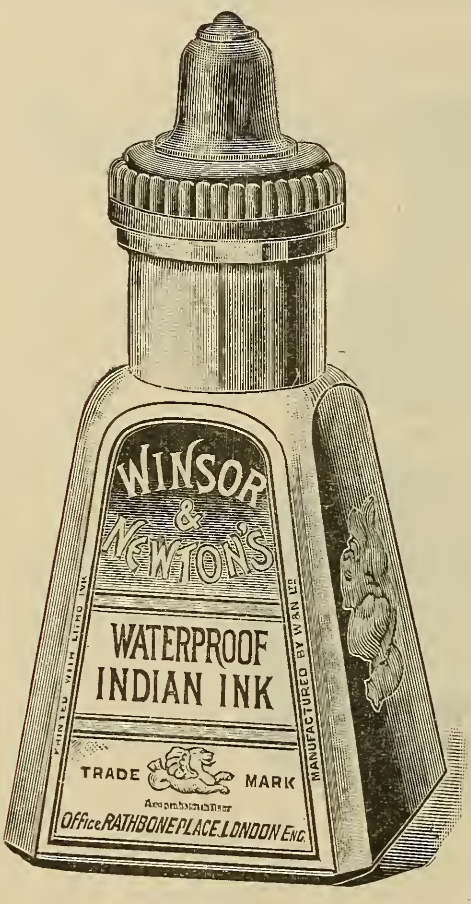
Special Prices in Gross Lots.

FOR ERASING FLUID SEE PAGE 5.

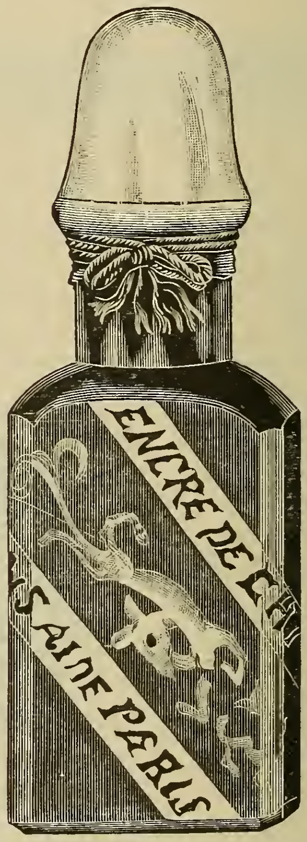
LIQUID DRAWING INKS.

(CONTINUED.)

WINSOR & NEWTON'S AND BOURGEOIS'.



2280



2285

2280. Winsor & Newton's Waterproof Drawing Ink, 1 oz., per bottle.........$0.25
Per dozen.. 2.75

Made in the following colors :

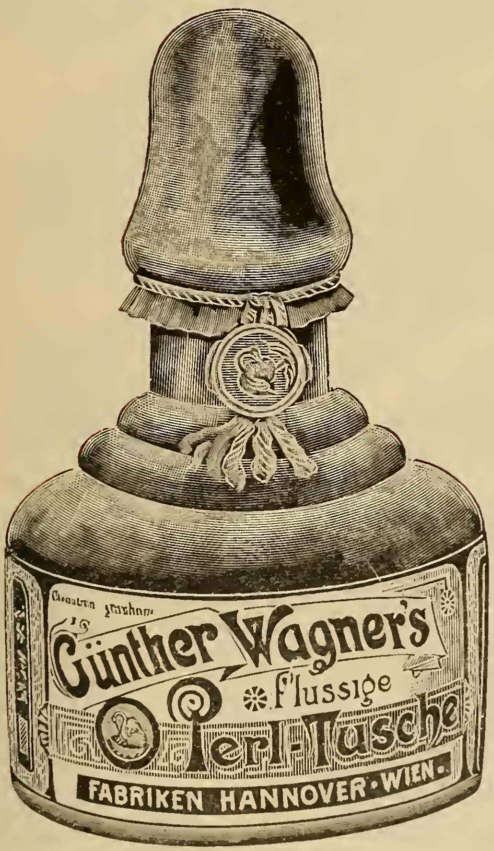
Black,
Brick Red,
Carmine,
Scarlet,
Vermilion,
Plum,
Ultramarine,
Indigo,
Turquois,
Emerald,
Olive Green.
Seagreen,
Grass Green,
Yellow,
Lemon,
Orange,
Burnt Sienna,
Brown,
Violet,
Purple,
Slate,

2285. Bourgeois' Waterproof Drawing Ink, Black only, medium size, per bottle...$0.25
Per dozen.. 2.75

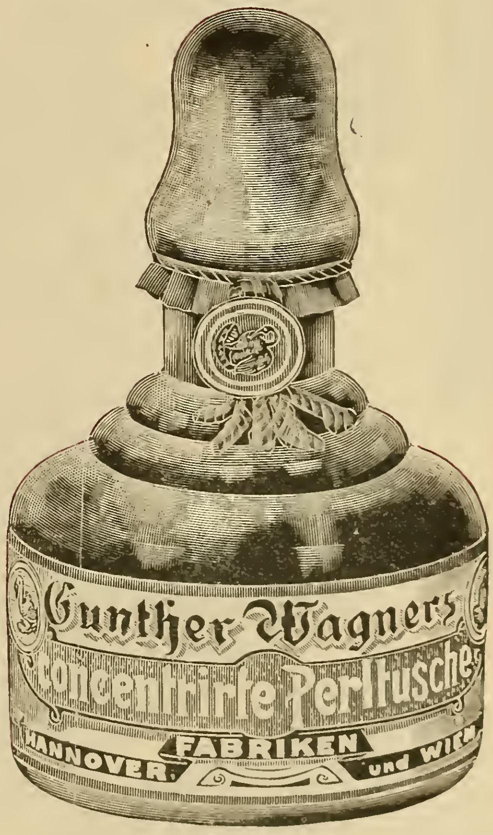
SPECIAL PRICES IN GROSS LOTS.

LIQUID DRAWING INKS.

(CONTINUED.)



2290



2295

				Per Bottle.
2290.	Günther Wagner's Liquid *Pearl* Ink, Waterproof,	1½ oz.,	Black...	$0.50
2295.	" *Concentrated Pearl* Ink, "	1½ "	" ...	.50

The above inks have acquired a very high reputation in Germany, being manufactured from the finest of Chinese Ink. The "Liquid Pearl Ink" (No. 2290) is a true black, guaranteed waterproof, and is an excellent one for general drafting use. The "Concentrated Pearl Ink" (No. 2295) is of intense blackness, strong body, and will be found an excellent one for use for drawings to be photographed, or reproduced by the black or blue process. We especially recommend it to Patent Solicitors. The cork of each bottle has a glass filler attached.

SPECIAL PRICES IN DOZEN AND GROSS LOTS.

CHINESE OR INDIAN INKS

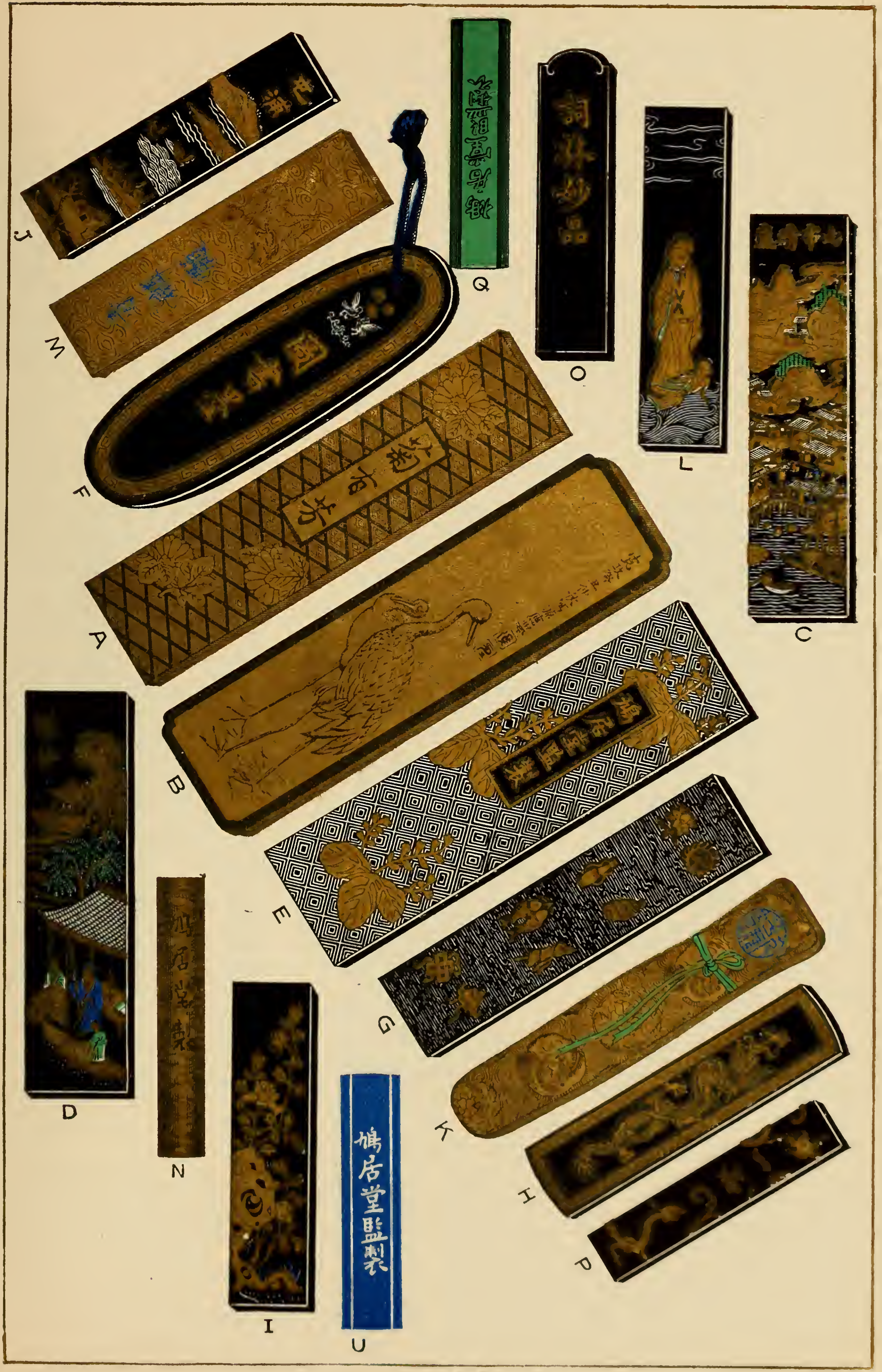
IN STICKS.

See Illustrations on Colored Page.

Our line of Chinese or Indian Stick Inks are imported directly by us and are a carefully selected assortment of the best brands. Numbers 2300-A to 2300-Q are exactly reproduced on the Colored Page of Stick Inks, with the exception that the illustrations are two-thirds size. Especial attention is called to Numbers 2300 A, B, C, and D, which are of *extra fine* quality.

			Each.
2300.	A,	Indian, Oblong, Black and Gold Lattice Work	$8.00
	B,	“ “ Golden Royal Twin Storks	5.00
	C,	Chinese, “ Village, Black, Green and Gold	3.50
	D,	“ “ Black, Gold, Green and Blue	3.25
	E,	Indian, “ Black, Gold and Silver	3.00
	F,	“ Oval, Black and Gold	3.00
	G,	Chinese, Oblong, Black, Gold and Silver	2.50
	H,	“ “ Golden Dragon	2.50
	I,	“ “ Black, Golden Rose	2.25
	J,	“ “ Black and Gold	2.25
	K,	“ “ Gold, Blue and Green	2.00
	L,	“ “ Black, Green and Gold	1.50
	M,	“ “ Gold and Blue, with Dragon	1.40
	N,	Indian, Oval, Gold	1.25
	O,	Chinese, Oblong, Black and Gold	1.00
	P,	“ “ Black, with Golden Serpent	.40
	Q,	Emerald Green, Chinese, Oblong	.25
	R,	Grass Green, “ “	.25
	S,	Indian Red, “ “	.25
	T,	Vermilion, “ “	.25
	U,	Prussian Blue, “ “	.25
	V,	Violet, “ “	.25
	W,	Chrome Yellow, “ “	.25
	X,	White, “ “	.25

PLEASE SEE ADDITIONAL LINE OF STICK INKS ON FOLLOWING PAGES.



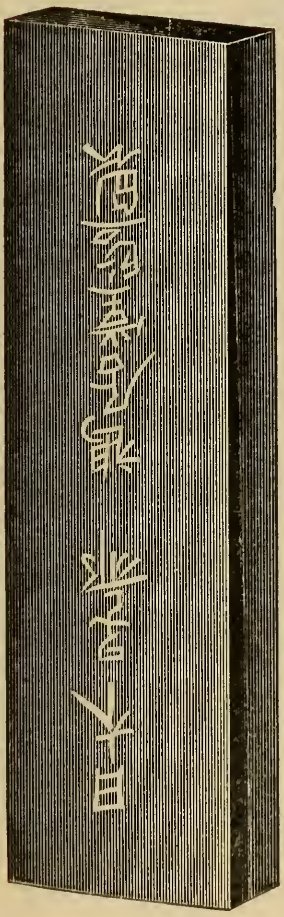
ILLUSTRATIONS ½ FULL SIZE.

CHINESE OR INDIAN INKS.

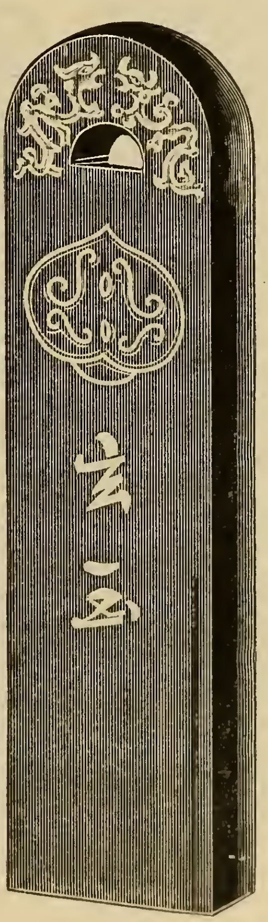
(CONTINUED.)

The following line of Stick Inks are also imported directly by us, and can be recommended to the users of this kind of ink. Especial attention is called to Nos. 2305, 2306, 2307 and 2308, which are of **extra fine** quality.

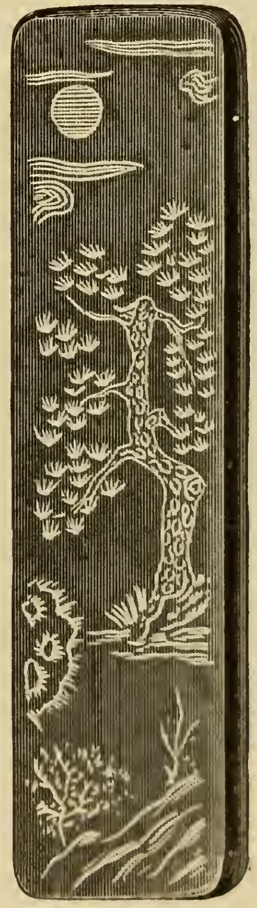
Illustrations, Full Size.



2305



2306



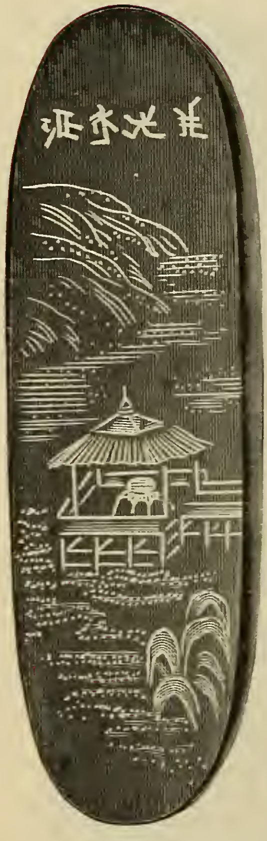
2307

2305.	Chinese, Chrysanthemum, Black and Gold	Each,	$7.00
2306.	" Monument, Black and Gold	"	6.00
2307.	Indian, Finest Flat with Moon	"	4.00

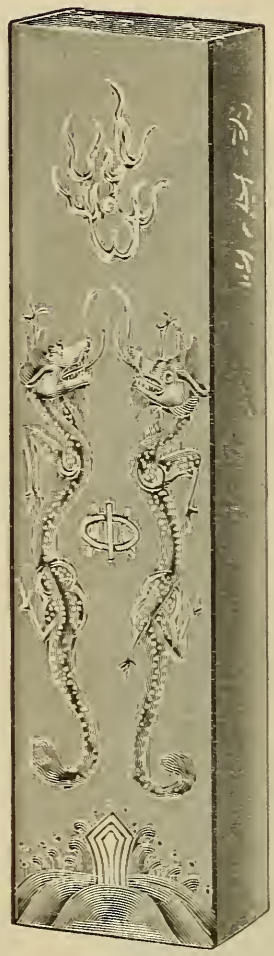
CHINESE OR INDIAN INKS.

(CONTINUED.)

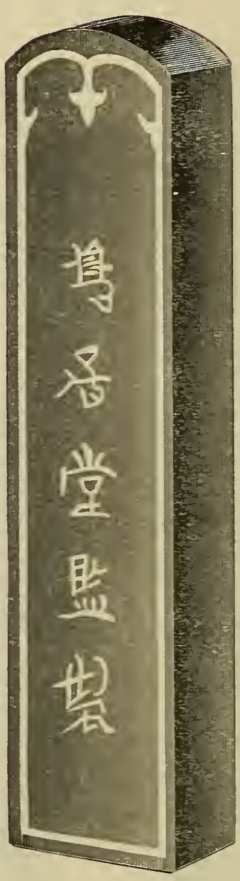
Illustrations Full Size.



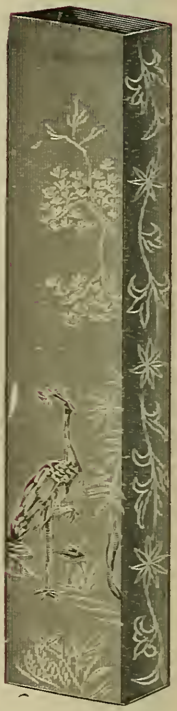
2308



2309



2310



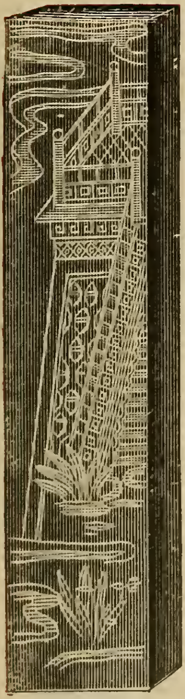
2311

2308.	Indian, Oval, Gold and White, Very Fine	Each,	$4.00
2309.	Chinese, Oblong, Golden Dragon, Extra Fine	"	4.00
2310.	" " Black and Gold	"	3.50
2311.	" " Golden Stork	"	3.00

CHINESE OR INDIAN INKS.

(CONTINUED.)

Illustrations Full Size.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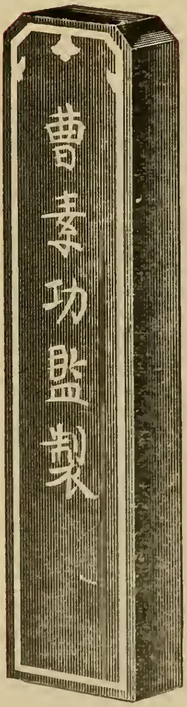

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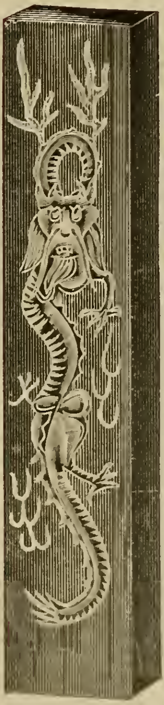
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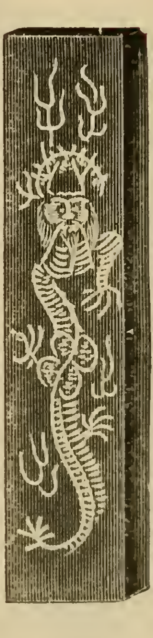
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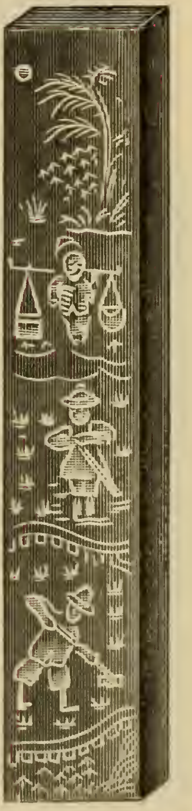
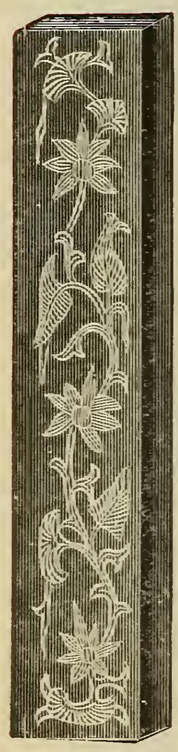

2316

2312.	Chinese, Oblong, Tower, Gold and Blue with Pearl...........	Each,	$3.00
2313.	" " Finest Pearl, Gold and Blue....................	"	2.50
2314.	" " Gold Dragon with Pearl..........................	"	2.50
2315.	" " " " " "	"	2.00
2316.	" " Water Carrier White and Gold................	"	2.00

CHINESE OR INDIAN INKS.

(CONTINUED.)

Illustrations Full Size.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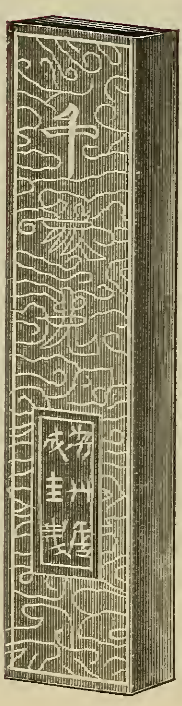
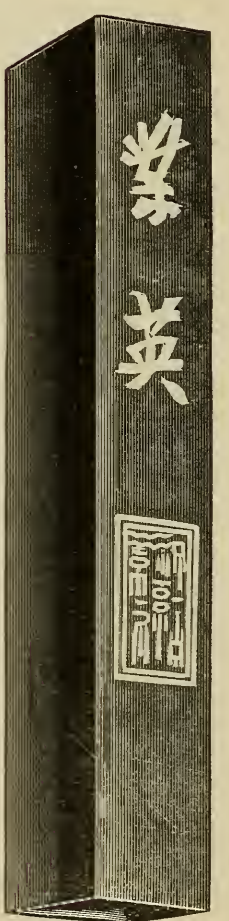

2318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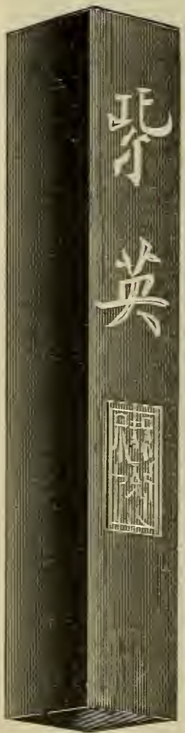
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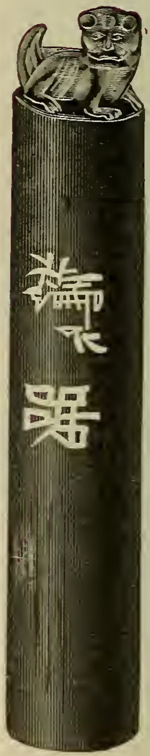
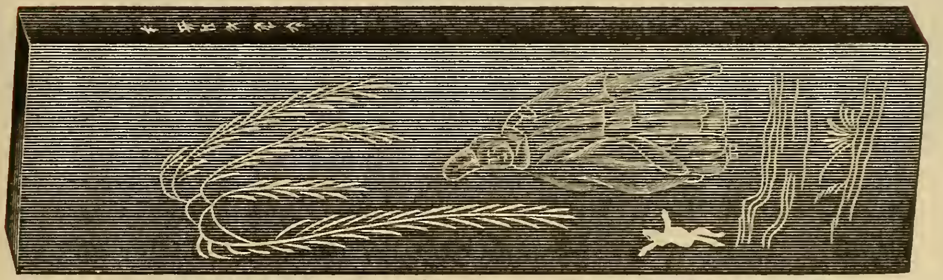

2321

2317.	Chinese, Oblong, Pearl, Golden Vine	Each,	$1.50
2318.	" " with Green and Gold	"	1.50
2319.	" " Genuine Super Super, Large	"	1.00
2320.	" " " " " Small	"	.50
2321.	" Oval, Gold Lion	"	.50

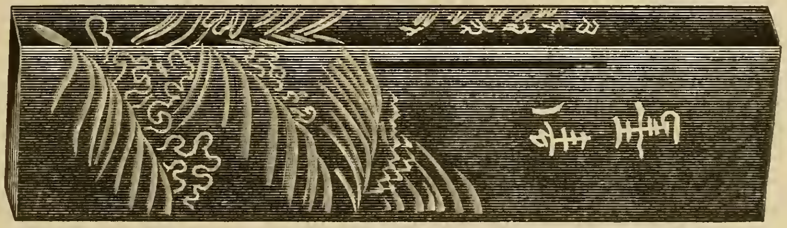
CHINESE OR INDIAN INKS.

(CONTINUED.)

Illustrations Full Size.



2322



2323

2322.	Chinese, Oblong, Golden Frog	Each,	$ .50
2323.	" " Black and Gold	"	.35

PHOTO-DRAWING INK.

Illustration Full Size.

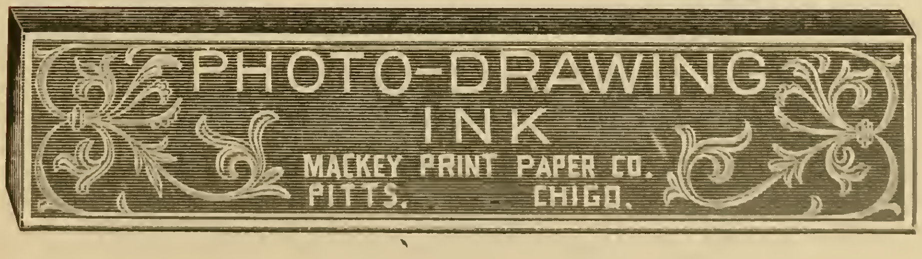


PHOTO-DRAWING
INK
MACKEY PRINT PAPER CO.
PITTS. CHICO.

2330

2330.	Photo-Drawing Ink	Each,	$1.00

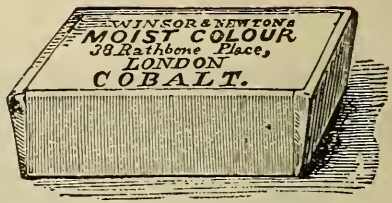
Our Photo-Drawing Ink is of special value to Patent Solicitors, Photo-Lithographers and Engravers for use for drawings to be reproduced either by blue process or photography. The color is a dead black.

WATER COLORS,

WINSOR & NEWTON'S.

Full Cake.

Half Pan.



Full Pan.

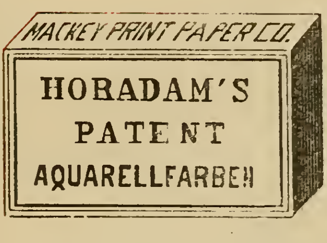
No.	Colors	Full Cake or Pan.	Half Cake or Pan.
2350.	1 Antwerp Blue, 2 Bistre, 3 Blue Black, *4 British Ink, *5 Bronze, 6 Brown Ochre, 7 Brown Pink, 8 Burnt Sienna, 9 Burnt Umber, 10 Chinese White, 11 Chrome Deep, 12 Chrome Orange, 13 Chrome Yellow, 14 Cologne Earth, *15 Dragon's Blood, 16 Emerald Green, *17 Flake White, 18 Gamboge, 19 Hooker's Green, No. 1, 20 Hooker's Green, No. 2, 21 Indigo, 22 Indian Red, 23 Italian Pink, 24 Ivory Black, *25 King's Yellow, 26 Lamp Black, 27 Light Red, 28 Naples Yellow, 29 Neutral Tint, 30 New Blue, 31 Olive Green, 32 Payne's Grey, 33 Prussian Blue, 34 Prussian Green, 35 Raw Sienna, 36 Raw Umber, 37 Roman Ochre, 38 Sap Green, 39 Terre Verte, 40 Vandyke Brown, 41 Venetian Red, 42 Vermilion, 43 Yellow Lake, 44 Yellow Ochre.	$.25	.15
2351.	*46 Black Lead, 47 Brown Madder, 48 Cerulean Blue, *49 Constant White, 50 Crimson Lake, 51 Mars Yellow, 52 Neutral Orange, 53 Purple Lake, 54 Roman Sepia, 55 Ruben's Madder, 56 Scarlet Lake, 57 Scarlet Vermilion 58 Sepia, 59 Warm Sepia.	.45	.25
2352.	60 Cobalt Blue, 61 Indian Yellow, 62 Lemon Yellow, 63 Orange Vermilion, 64 Violet Carmine, 65 Viridian or Veronese Green.	.65	.35
2353.	66 Aureolin, 67 Burnt Carmine, 68 Carmine, 69 Cadmium Yellow, 70 Cadmium Yellow, Pale, 71 Cadmium Orange *72 Field's Orange Vermilion, 73 French Blue. or French Ultramarine. 74 Gallstone, 75 Indian Purple, 76 Intense Blue, 77 Mars Orange, 78 Oxide Chromium 79 Pink Madder, 80 Pure Scarlet, 81 Rose Madder, or Madder Lake.	.90	.45
2354.	*82 Madder Carmine 83 Purple Madder, 84 Smalt, 85 Ultramarine Ash	1.40	.70

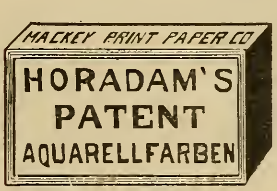
2355. 86 Genuine Ultramarine Blue, ¼ Cake................................each, $2.25

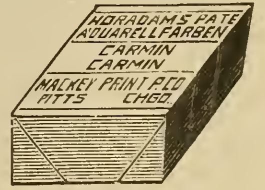
*** Colors marked * are not made in Full and Half Pans.**

WATER COLORS.

HORADAM'S PATENT.







2360. ‡Zinc White,
Cream White,
*Flake White,
Chrome Yel. Light,
Chrome Yel. Dark,
‡Chrome Yel. Orange,
‡Lemon,
‡Yellow Lake,
‡Yellow Ultramarine
*Yellow Ochre,
‡Gold Ochre,
Gamboge,
‡Brilliant Yel. Light
‡Brilliant Yel. Dark.
‡Light Ochre No. 1,
‡Light Ochre No. 2,
‡Mars Yellow,
Naples Yellow,
‡Roman Ochre,
Sienna,
*Orange,
‡Dragon's Blood,
‡English Red,
Indian Red,
‡Burnt Light Ochre,
Light Red,
Saturn Red,
*Carmine Lake Light
*Carmine Lake Dark
‡Italian Red,
‡Carmine Lake Med.,
‡Mars Orange,
‡Crimson,
‡Rose Lake,
‡Scarlet Lake,
*Persian Red,
Venitian Red,
‡Caput Mortuum,
Light Vermilion,
‡Orange Vermilion,
‡Scarlet Vermilion,
‡Chinese Vermilion,
‡Bistre,
*Solferino,
‡Cassel Brown,
Cologne Earth,
‡Dark Ochre,
Sepia,
Warm Sepia,
‡Italian Sepia,
‡Brown Pink,
‡Green Pink,
Burnt Sienna,
Umber,
Burnt Umber,
Vandyke Brown,
‡Antwerp Blue,
Indigo,
*Magenta,
‡Mauve,
‡Permanent Blue,
Prussian Blue Light
*Prussian Blue Dark
Violet Lake,
*Azure Blue,
*Blue Verditer,
*Mineral Blue,
‡Chrome Green,
‡Emerald Green,
*French Green,
‡Green Earth,
‡Hooker's Green, No. 1,
‡Hooker's Green, No. 2,
Olive Green,
‡Permanent Green,
‡Prussian Green,
Sap Green,
*Wood Green,
Green Lake,
Chrome Green,
*Mineral Green,
Vegetable Green,
*Meadow Green,
‡Blue Black,
Ivory Black,
Lamp Black,
Neutral Tint,
‡Payne's Grey,
‡Grape Black,
Green Black,
*Graphite.

Full Cake or Pan.	Half Cake or Pan.
$.25	.15

Colors marked * are furnished in full and half cakes only.
Colors marked ‡ are furnished in full and half pans only.
Colors not marked are furnished in either pans or cakes.

WATER COLORS.

HORADAM'S PATENT.—CONTINUED.

		Full Cake or Pan.	Half Cake or Pan.
2361.	Aureolin, Carmine, Burnt Carmine, Violet Carmine, Madder Carmine, *Chinese Vermilion, Scarlet Lake, Cadmium Yel. Light Cadmium Yel. Dark Cadmium Yellow Orange, Indian Yellow, Madder Lake Light, Madder Lake Dark, Madder Lake Rose, Madder Lake Red Brown, Rubens' Madder, Purple Lake, MadderLakeBrown Madder Brown, Cerulean Blue, Cobalt Blue, Oxide of Chronium, Ultramarine, Veronese Green, Madder Purple,	$.40	.20

Colors marked * are furnished in cakes and half cakes only.
Colors not marked are furnished in pans and half pans only.

2362.	Madder Brown, Madder Lake Rose Gold Bronze, Indian Yellow, Madder Lake Dark, Brass, Silver Bronze, Ultramarine. ‡Oxide of Blue Green, ‡Oxide of Green Blue,	.54	.27

Colors marked ‡ are furnished in pans and half pans only.
Colors not marked are furnished in cakes and half cakes only.

2363.	Cadmium Yellow, Dark Cadmium, Carmine, Cobalt Blue.	.70	.35

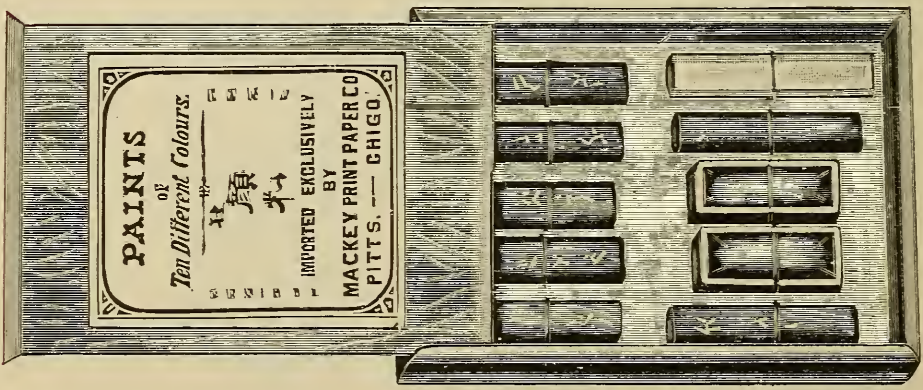
The above colors are furnished in cakes and half cakes only.

2364.	Finest Carmine, Burnt Carmine, Superfine Carmine.	1.30	.65

The above colors are furnished in cakes and half cakes only.

SUPERFINE CHINESE COLORS.

IN STICKS.



2365

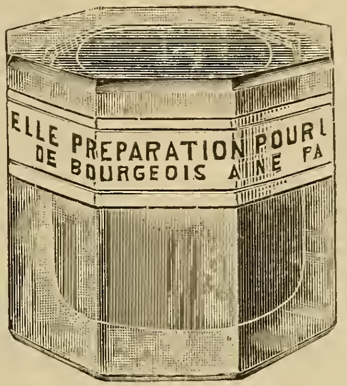
2365. Box containing 10 superfine colors.. $2.00

The above box contains the following colors in sticks:—Emerald Green, Grass Green, Indian Red, Vermilion, Yellow Ochre, Indigo, Violet, and White; also one full pan each of Indian Yellow and Madder Brown.

BOURGEOIS'

TECHNICAL MOIST WATER COLORS.

IN GLASS POTS WITH GLASS LIDS.



2370

2370. **Bourgeois (French) Technical Moist Water Colors** are conceded by everyone who has used them to be far superior to anything yet offered in this line, having a world-wide reputation of long standing. Their long period on the market and the great demand for them by those who prefer a fine article is most satisfactory proof of their excellence.

1. Cast Iron.
2. Wrought Iron.
3. Steel.
4. Copper.
5. Brass.
6. Machinery.
7. Leather.
8. Light Wood.
9. Dark Wood.
10. Brick.
11. Stone.
12. Brown Stone.
13. Prussian Blue.
14. Gamboge.
15. Yellow Ochre.
16. Vermilion.
17. Chinese White.
18. Green................Each, $0.30

2371. 19. Carmine.. " .90

MOIST CHINESE WHITE.

IN BOTTLES.

Each.

2375. **Winsor & Newton's** Permanent Chinese White, Small Bottle..............................$0.16

2376. **Winsor & Newton's** Permanent Chinese White, Large Bottle.............................. .30

2376

WATER COLOR LIQUIDS.

2377

2378

2377. **WINSOR & NEWTON'S** Water Color Liquids, Small Size.

Asphaltum.
Carmine.
Gold Ink.
Lamp Black.
Oxgall.
Prout's Brown.
Prussian Blue.
Sepia.
Silver Ink.
Vermilion.

Per Bottle.. $0.16

2378. **WINSOR & NEWTON'S** Water Color Liquids, Large Size.

Asphaltum.
Carmine.
Gold Ink.
Lamp Black.
Oxgall.
Prout's Brown.
Prussian Blue.
Sepia.
Silver Ink.
Vermilion.

Per Bottle.. $0.30

EMPTY JAPANNED TIN BOXES.

FOR MOIST WATER COLORS.

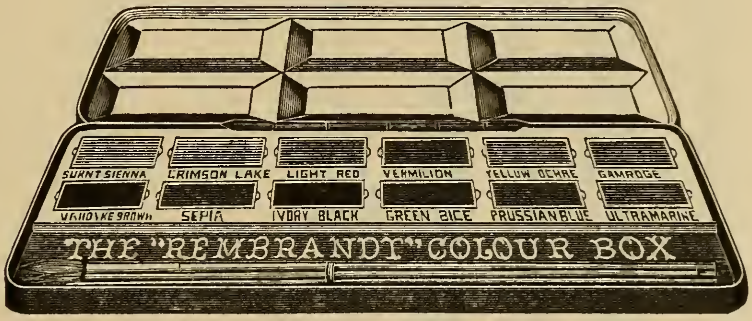
2380.	Japanned	Tin	Box for	6	Whole Pans	or	12	Half Pans...........	Each, $0.80
2381.	"	"	"	8	"	"	16	" " .... "	.90
2382.	"	"	"	10	"	"	20	" " .... "	1.05
2383.	"	"	"	12	"	"	24	" " .... "	1.15
2384.	"	"	"	18	"	"	36	" " .... "	1.40
2385.	"	"	"	24	"	"	48	" " .... "	1.60

JAPANNED TIN BOXES,

WITH MOIST COLORS.

The "Rembrandt" and "Murillo" Water Color Boxes listed below are of French manufacture and are the best obtainable. Those of German manufacture are not the equal of the French in quality, and therefore can be purchased at a considerably lower price. To all appearance they are exactly alike.

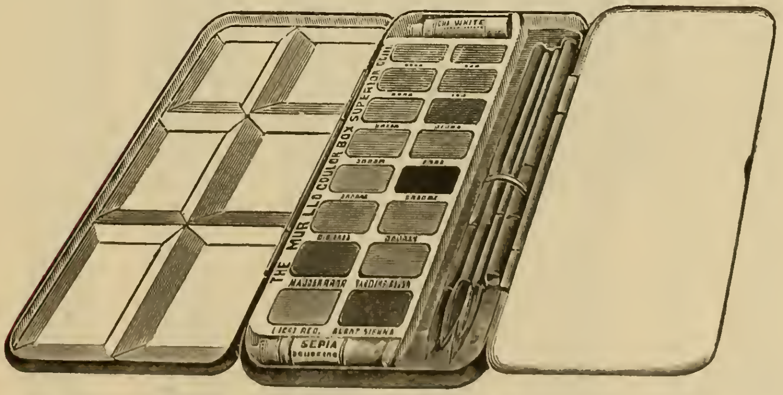
THE "REMBRANDT."



2391

		Per Box.
2390.	**"Rembrandt"** Water Color Box, containing 6 Pans Moist Colors......	$0.30
2391.	" " " " Large, " 12 " " " and Brushes,	.45

THE "MURILLO."

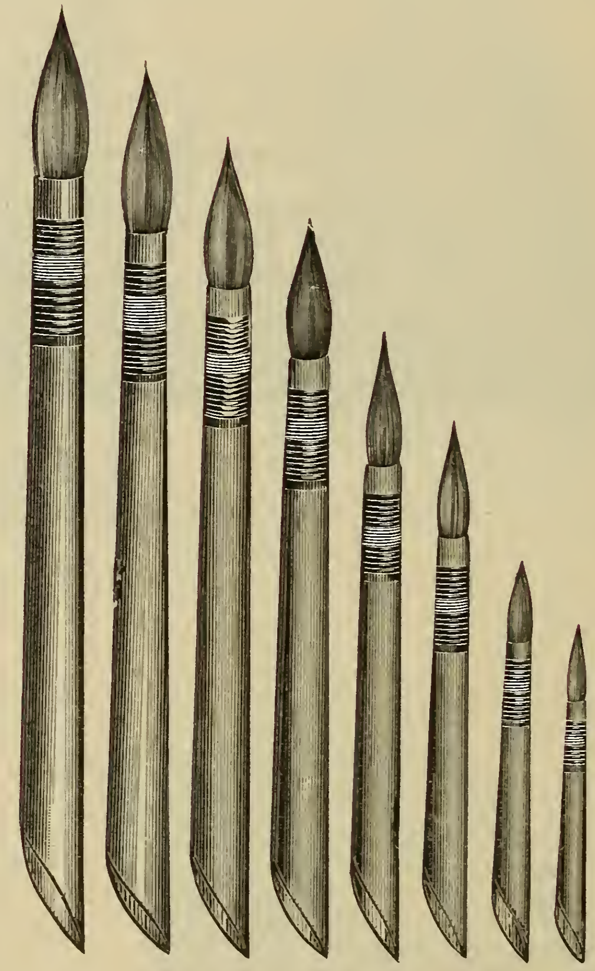


2393

		Per Box.
2392.	**"Murillo"** Water Color Box, Small, containing 12 Pans and 2 Tubes Moist Colors and Brushes..	$0.70
2393.	**"Murillo"** Water Color Box, Large, containing 16 Pans and 2 Tubes Moist Colors and 4 Camel-Hair Brushes......................	1.00

WATER COLOR BRUSHES.

Illustrations full size.



2400 — 2401

2400. Camel Hair in Quills.

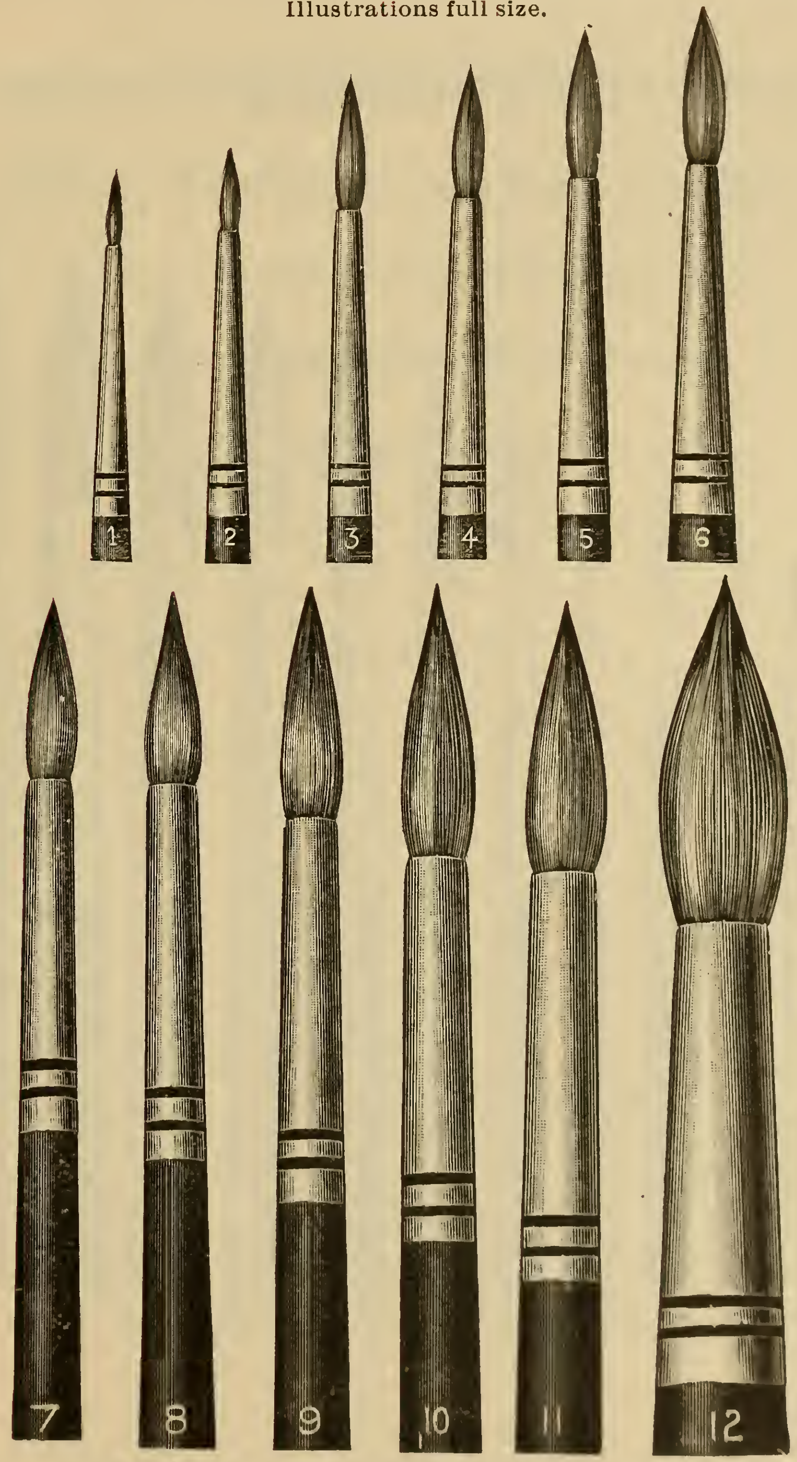
Numbers	1	2	3	4	5	6	7	8
Each	$0.05	.05	.06	.06	.08	.08	.10	.10

2401. Red Sable in Quills.

Numbers	1	2	3	4	5	6	7	8
Each	$0.12	.15	.20	.25	.30	.35	.50	.60

WATER COLOR BRUSHES—CONTINUED.

Illustrations full size.



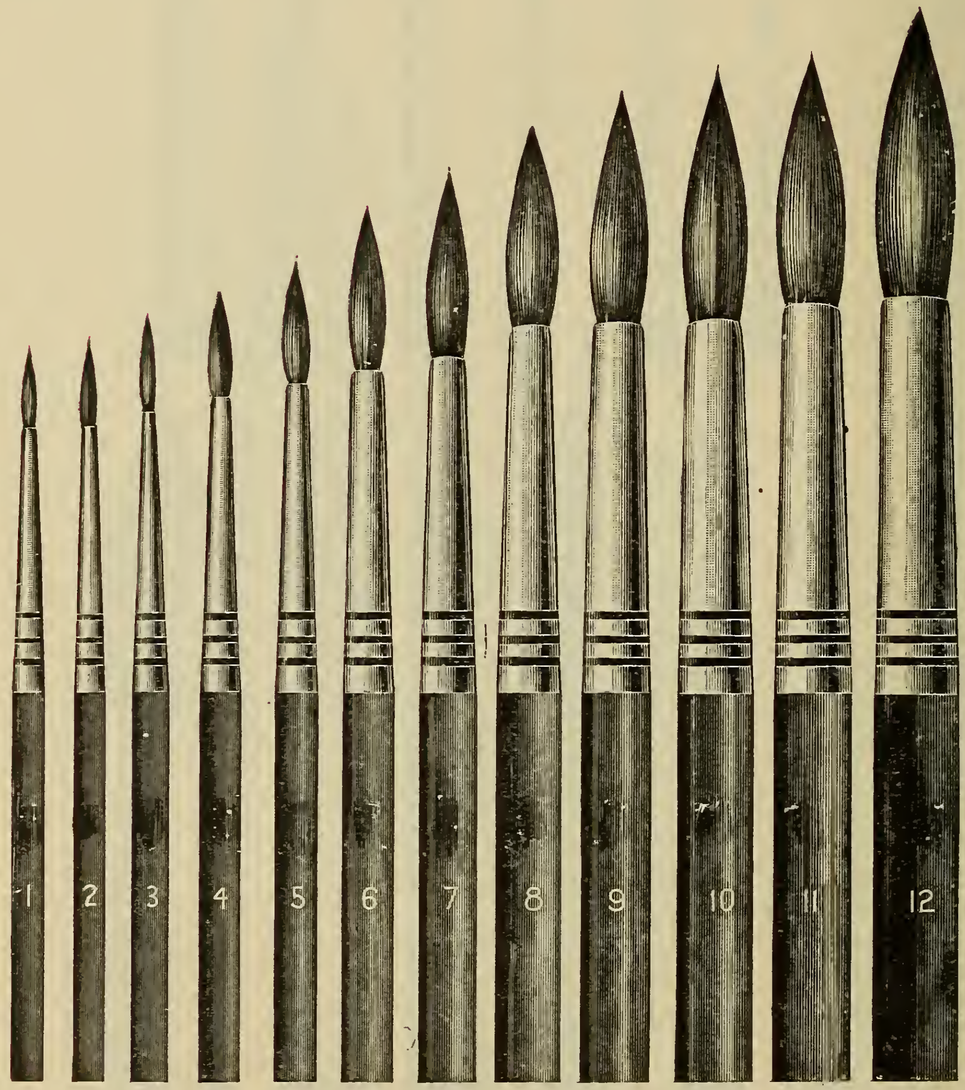
2405

No. 2405. **CAMEL HAIR**, in Tin.

Nos.	1	2	3	4	5	6	7	8	9	10	11	12
Each,	$0.10	.10	.10	.12	.12	.15	.18	.20	.25	.30	.35	.40

WATER COLOR BRUSHES—Continued.

Illustrations full size.



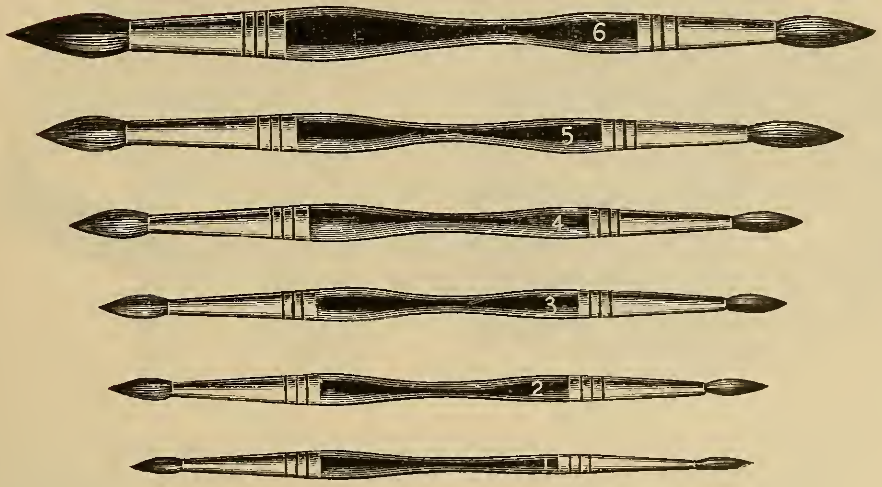
2406

2406. **RED SABLE**, in Albata, with Handle.

Numbers........	1	2	3	4	5	6	7	8	9	10	11	12
Each.............	$0.16	.18	.25	.30	.40	.55	.70	.90	1.20	1.50	2.00	2.50

WATER COLOR BRUSHES—CONTINUED.

Illustrations one-half size.



2410 — 2411

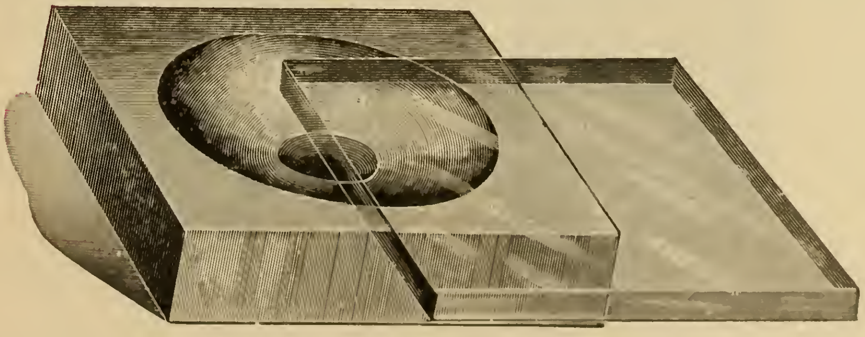
2410. **CAMEL HAIR,** Double Pointed, in Tin.

Numbers	1	2	3	4	5	6
Each	$0.30	.35	.40	.50	.60	.75

2411. **RED SABLE,** Double Pointed, in Albata.

Numbers	1	2	3	4	5	6
Each	$0.60	.75	1.15	1.45	1.80	2.10

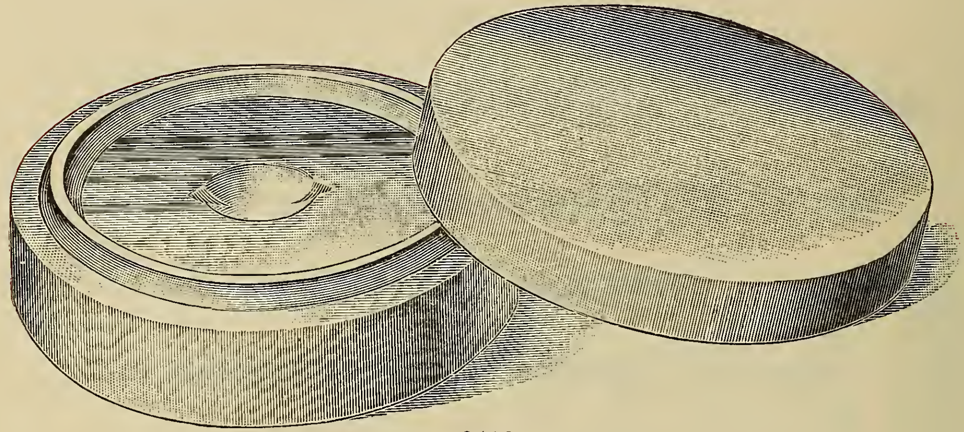
CHINA WARE.



2415

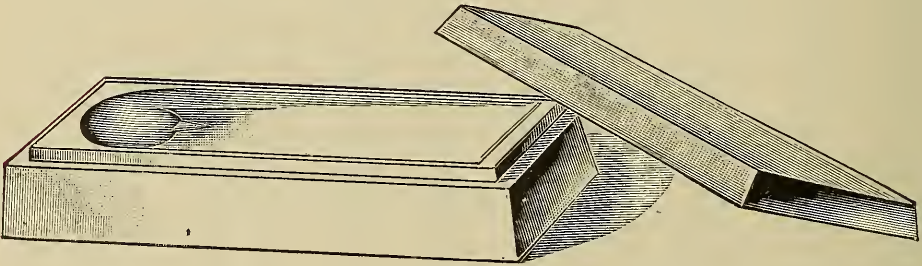
2415. Slate Ink Cup, 3½ inches square, ¾ inch thick, center well and airtight glass cover ....Each, $0.45

CHINA WARE—Continued.



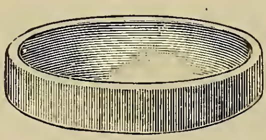
2416

2416. Round Opal Glass Ink Saucer, 3½ inches diameter, ground edges, to prevent evaporation when closed. Either rough or smooth grinding surfaces furnished..........................Each, $0.50

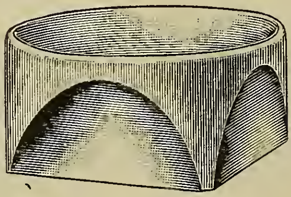


2417

2417.	China Ink Slab, with cover, 1¾ × 4½ inches	Each,	$0.35
2418.	" " " " " 2¼ × 5¼ "	"	.40



2419

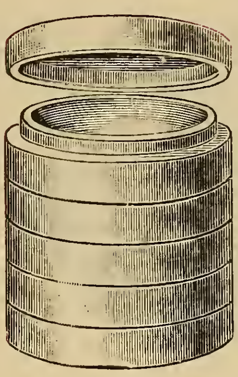


2420

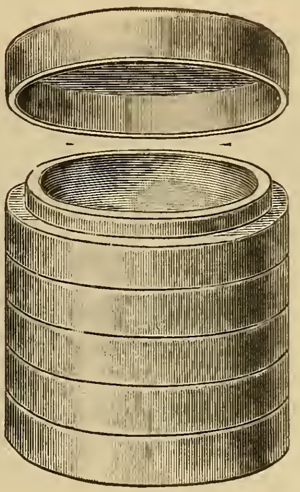
2419. China Color Saucers, Diameter, Inches	2	2½	3	3½
Each	$0.05	.07	.10	.20

2420. China Color Pots, 1⅜ inches deep, 2½ inches diameter.........Each, $0.12

CHINA WARE—CONTINUED.



2421



2422

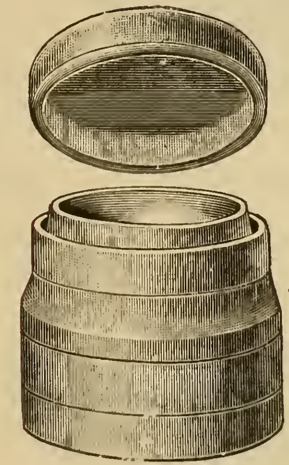
2421. Nest of Fine Cabinet Saucers, 6 in Set.

Diameter, Inches	2⅛	2½	3
Per Set	$0.35	.40	.50

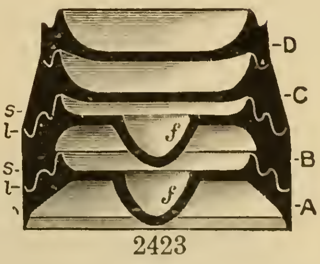
2422. Nest of Superfine Cabinet Saucers, 6 in Set.

Diameter	2⅜	2⅝	3	3½
Per Set	$0.50	.60	.70	.80

A "Nest of 6" consists of 5 Saucers and Cover.



2423



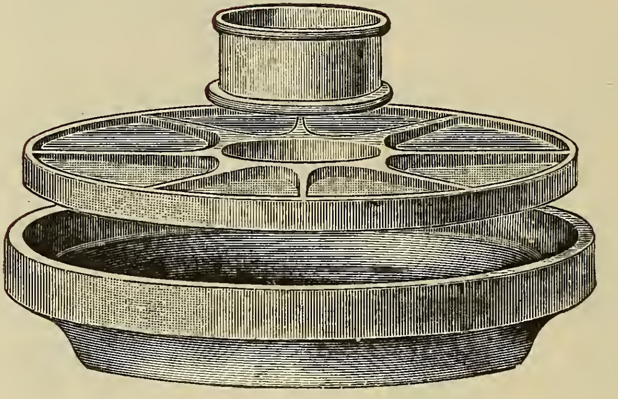
2423

SECTION.

2423. Nest of **Improved** Cabinet Saucers, 5 in Set, 3⅜ inches diameter at bottom.......................Per Set, $0.80

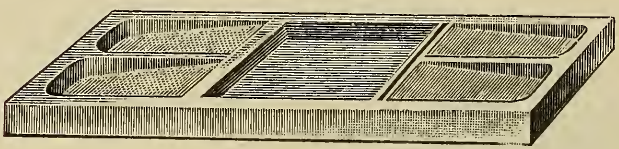
This Improved Cabinet Ink and Color Saucer will be found to be a very decided improvement over the ordinary form, as the peculiar construction prevents the evaporation of the ink which invariably occurs when using any other ink saucer. Keeping the Ink Saucers covered when in use will be found ample protection, and when not in use a drop of water placed in the grooves will seal the lids and saucers so that *evaporation is impossible*.

CHINA WARE—Continued.



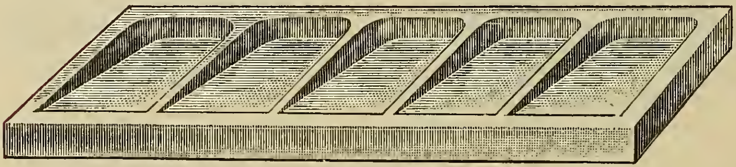
2424

2424. Architect's Color Basin, 8 slopes and color basin, 7 inches diameter, china..Each, $1.35



2425

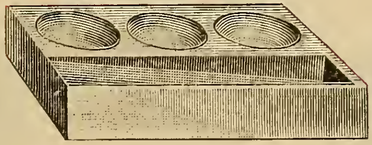
2425. China Center Slab, 2⅜ × 6¼ inches, 5 divisions..................Each, $0.20



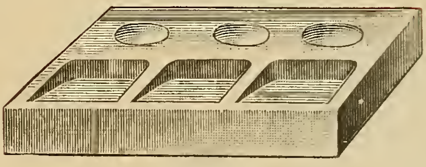
2428

2426.	China Sloping Tile,	2½ × 4⅛,	3 divisions	...........................Each,	$0.15
2427.	" " "	3⅛ × 7⅞,	4 "	.... "	.30
2428.	" " "	3⅛ × 7⅞,	5 "	.... "	.35
2429.	" " "	3⅛ × 7⅞,	6 "	.... "	.40
2430.	" " "	6 × 7½,	8 "	.... "	.50

CHINA WARE—Continued.

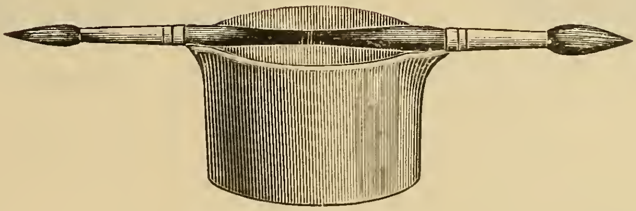


2431



2432

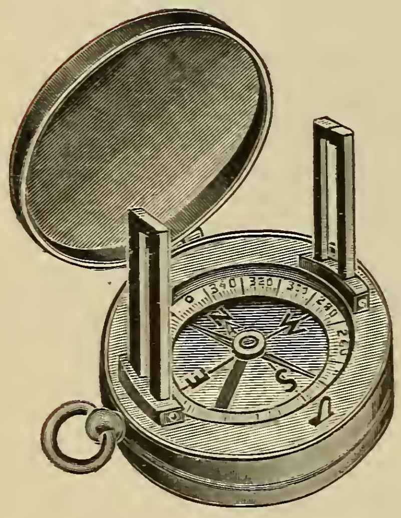
		Each.
2431.	Chinese Ink and Color Slab, 2½ by 4 inches, 3 wells and 1 slope.....	$0.20
2432.	“ “ “ “ “ 2½ by 4 “ 3 “ “ 3 “	.20
2433.	“ “ “ “ “ 4⅛ by 7½ “ 5 “ “ 5 “	.55



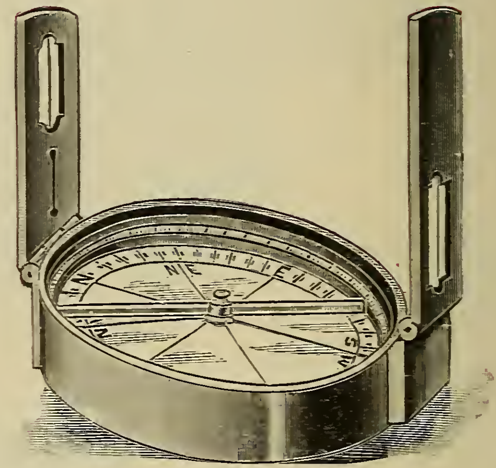
2441

2440.	Water Glass, 2⅜ inches diameter, for washing brushes.........	Each,	$0.12
2441.	“ “ 3⅛ “ “ “ “ “	“	.22

MAGNETIC COMPASSES.

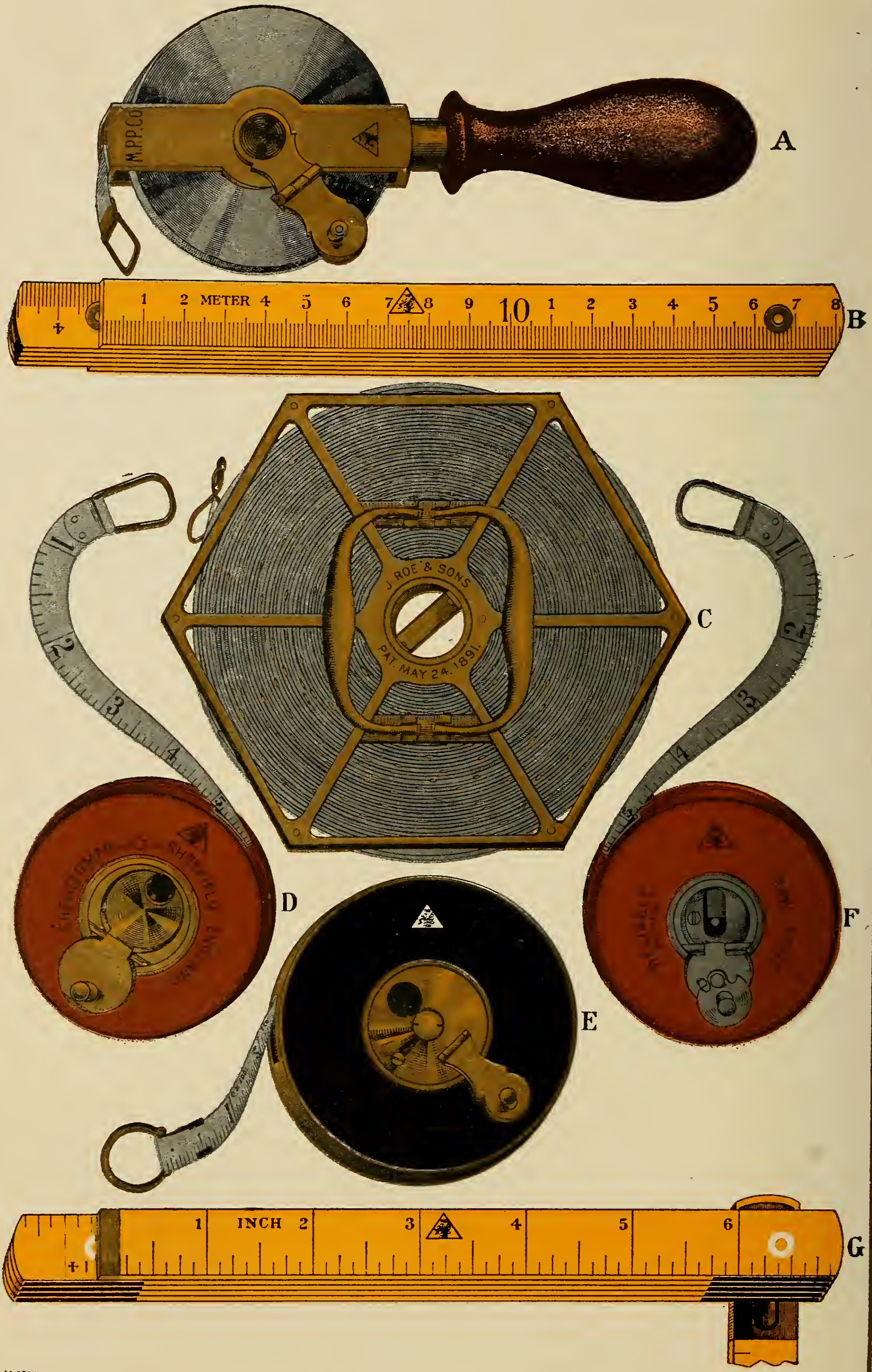


2445L



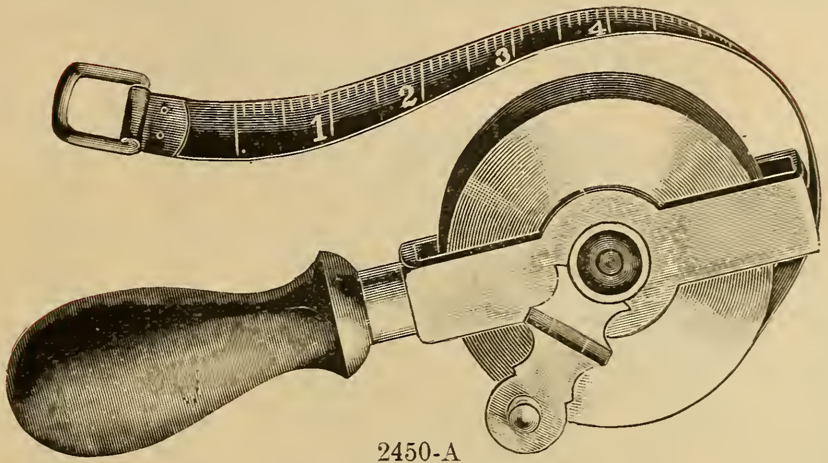
2445K

		Each.
2445A.	Pocket Compass, watch pattern, brass, 1 inch	$0.40
B.	“ “ “ “ “ 1½ “	.50
C.	“ “ “ “ German Silver, agate center, stop to needle, 2 inch	1.20
D.	Pocket Compass, round, brass, with cover, 1½ inch	.30
E.	“ “ “ “ “ “ 2 “	.50
F.	“ “ “ “ “ “ and stop to needle, 1½ inch...	.50
G.	“ “ “ “ “ “ “ “ 2 “	.75
H.	“ “ in square mahogany case, stop to needle, 1¾ “	1.00
I.	“ “ round, brass, with cover, agate center, stop to needle, 1½ inch...	1.25
J.	Pocket Compass, round, brass, with cover, in round leather case, agate center, edge bar needle, and stop to needle, 2 inch........	2.50
K.	Bronzed Pocket Compass, with folding sights, edge bar needle, with cover, best quality, 3 inch..	6.25
L.	Nickel Plated Pocket Compass, 2 inch, watch pattern, with folding sights, bar needle, agate center, stop to needle...........	4.00
M.	Same as No. 2445L, but 2⅜ inch..	4.75
N.	“ “ “ 2445L, “ 2¾ “	6.00


M.P.P.CO
A
1 2 METER 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8
B
J. ROE & SONS
PAT. MAY 24. 1891.
C
D
E
F
1 INCH 2 3 4 5 6
G

M.2278.

MEASURING TAPES.

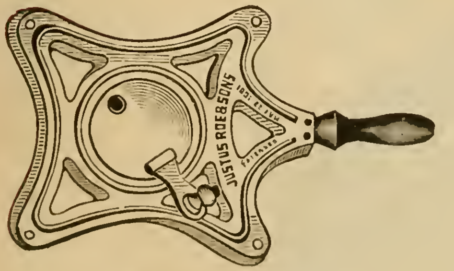


2450-A

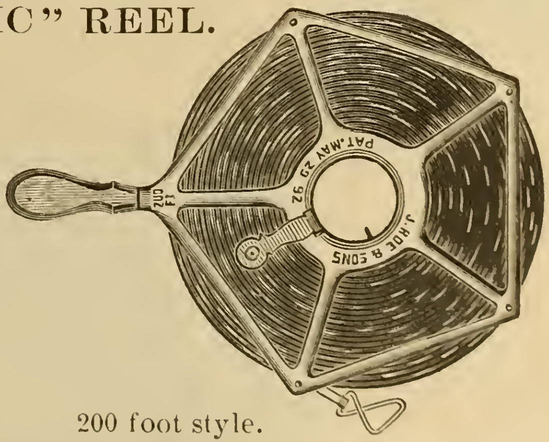
"**STANDARD**" Steel Tape, ½ inch wide, on patent brass frame with handle. Especially adapted for Mine and Railroad use.

		FEET. 50	100
2450-A.	Divided in 10ths	$6.60	11.50
2451-A.	" in 12ths		
2452-A.	" in 10ths and Links	6.90	12.10
2453 A.	" in 12ths " "		
2454-A.	" in 12ths " Meter	8.10	14.50

ROE'S STEEL TAPE CHAINS ON PATENT "ELECTRIC" REEL.



50 and 100 foot style.



200 foot style.

See Colored Page for Illustration of 300-Foot Style.

These Tapes are made of superior steel, made to order especially for the purpose, are about ¼ inch in width, are graduated every foot or link by brass rivets, and each end foot in tenths or inches. Every 5 feet or link has a *brass* clasp with numbers, and every 10 feet or link has a *copper* clasp with numbers indelibly stamped on both sides thereon. Instructions are sent with every tape and reel how to use them to best advantage. No matter how dirty or rusty the tape may be, the rivets, clasps and figures can be plainly seen. These tapes have detachable handles so as not to catch anywhere when drawn through brush, and are wound up on an "electric" reel. This reel allows the entire tape open to dry, and the tape can be reeled or unreeled as easily and readily as the linen or metallic tapes in cases. The tape can also be detached very easily and used without a reel.

The aluminum and nickel-plated tapes are much less liable to rust, and require no oiling or cleaning after being used.

Steel Tape Chains, 400 and 500 feet long furnished at short notice.

See top of next Page for list of Roe's Steel Tape Chains on Patent Electric Reel.

ROE'S STEEL TAPE CHAINS.

(See Page 199 for Illustration and Description.)

				Plain.	Nickel Plated.	Aluminum Plated.
2460.	50 feet long, every	foot.	End feet in tenths...	$4.00	5.00	5.50
2461.	50 " "	foot.	" inches...	4.00	5.00	5.50
2462.	100 " "	foot.	" tenths....	5.00	6.00	7.00
2463.	100 " "	foot.	" inches...	5 00	6.00	7.00
2464.	100 " "	5 feet.	" tenths...	4.00	5.00	6.00
2465.	100 " "	5 feet.	" inches...	4.00	5.00	6.00
2466.	200 " "	foot.	" tenths...	7.50	9.00	10.50
2467.	200 " "	foot.	" inches...	7.50	9.00	10.50
2468.	200 " "	5 feet.	" tenths...	6.00	7.50	9.00
2469.	200 " "	5 feet.	" inches...	6.00	7.50	9.00
2470C.	300 " "	foot.	" tenths...	10.00	12.00	14.00
2471C.	300 " "	5 feet.	" tenths	8.00	10.00	12.00
2472C.	300 " "	foot.	" inches...	10.00	12.00	14.00
2473C.	300 " "	5 feet.	" inches...	8.00	10.00	12.00

2474.	Electric Reel, without Tape, for 100 feet..	1.50
2475.	" " for 200 "	2.00
2476.	" " for 300 "	2.50
2477.	Brass Detachable Handles, per pair..	.30

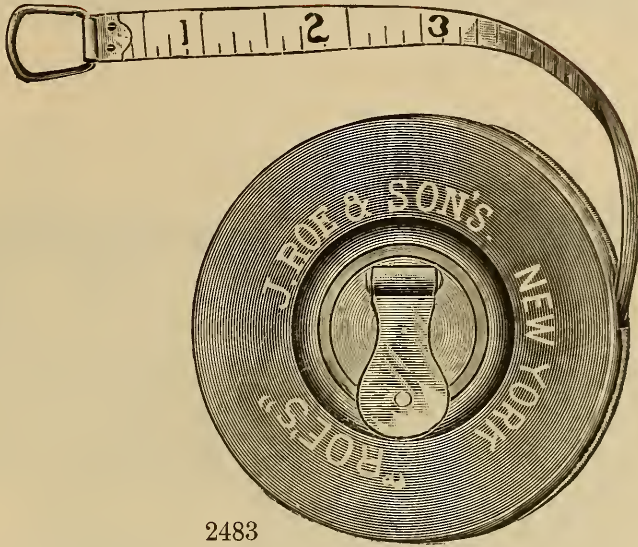
ROE'S STEEL TAPES.

2480

ROE'S Steel Tapes, ⅜ inch wide, in Red Bent Leather Case, having Nickel Plated Trimmings and Flush Handles.

	Length in feet..................................	25	33	50	66	75	100
2480.	Divided in 10ths, with Links......each,	$4.25	5.00	6.85	8.65	9.70	12.20
2481.	" in 12ths, " "	4.25	5.00	6.85	8.65	9.70	12.20

ROE'S STEEL TAPES.—CONTINUED.

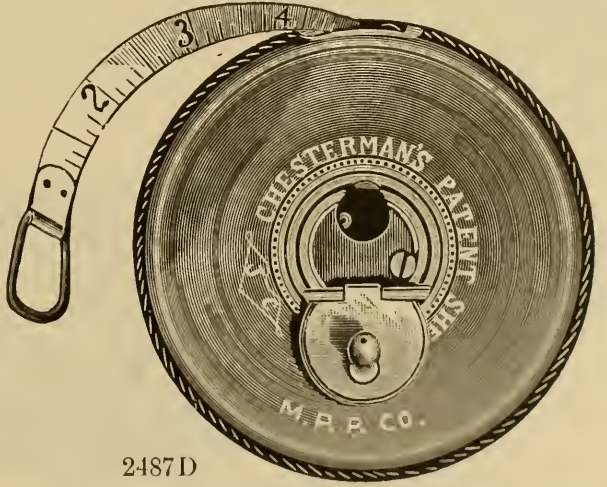


2483

ROE'S Steel Tape, ⅜ inch wide, *marked one side only.* Nickel Plated Brass Case, Flush Handle, and will be found a perfectly reliable tape for those desiring a good tape at a medium price, as the accuracy is guaranteed. This tape is easily *detached* from the case, and an extra handle is furnished for inside end.

	Length in Feet	25	50	75	100
2483.	Divided in feet, inches and eighths	$3.25	4.00	5.25	6.75
2484.	“ in tenths and 100ths	3.25	4.00	5.25	6.75

CHESTERMAN'S TAPES.



2487D

Divided in 10ths and Links, or 12ths and Links, in Leather Cases.

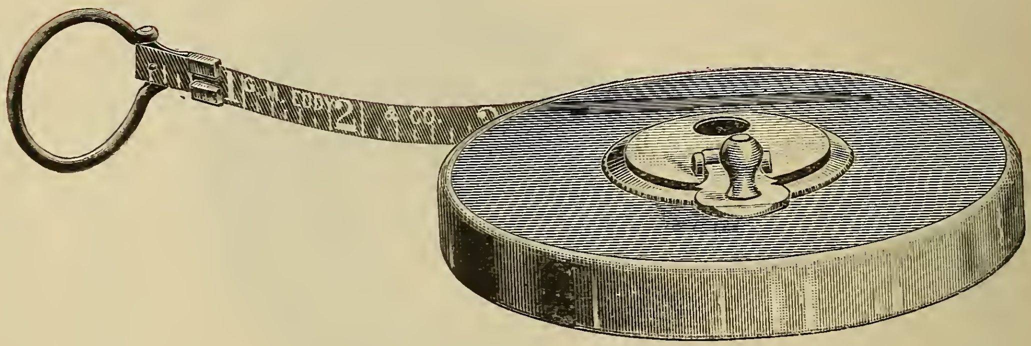
Please specify, when ordering, whether 10ths or 12ths is desired.

	Length in feet	25	33	50	66	75	100
2485.	All Linen, ⅝ inch wide, each	$1.40	1.60	2.10	2.40	2.60	3.20
2486.	Metallic, ⅝ “ “	1.80	2.10	2.60	3.00	3.30	4.20
2487D.	Steel, ⅜ “ “	4.50	5.20	7.20	9.20	10.40	12.80

Metallic Tapes only, without Case.

	Length in feet	50	66	75	100
2488.	Each	$1.50	1.80	2.20	2.90

EDDY'S STEEL TAPES.

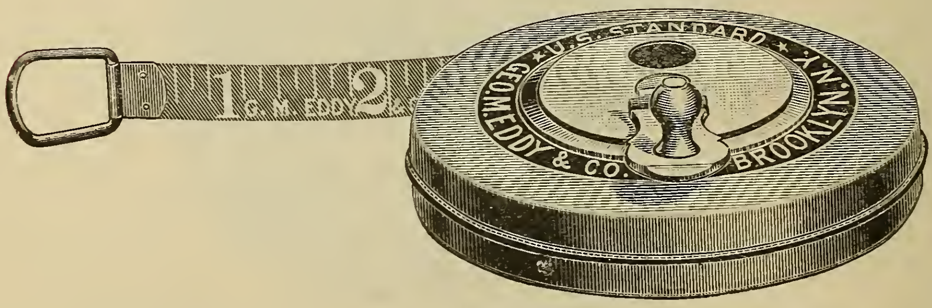


2490-E

PAINE'S Patent Standard Steel Tapes, in Iron Cases, Brass Bound, Morocco Covered, Improved Handle. Are detachable from case, and are furnished with detachable rings to avoid breakage.

	Length in feet	25	33	50	66	75	100
2490-E.	Steel Tape, in 10ths or 12ths, each	$3.50	4.50	6.00	8.00	10.00	12.00

2491. Detachable Compensating Handles for various Temperatures, Graduated.......Per pair, $3.00



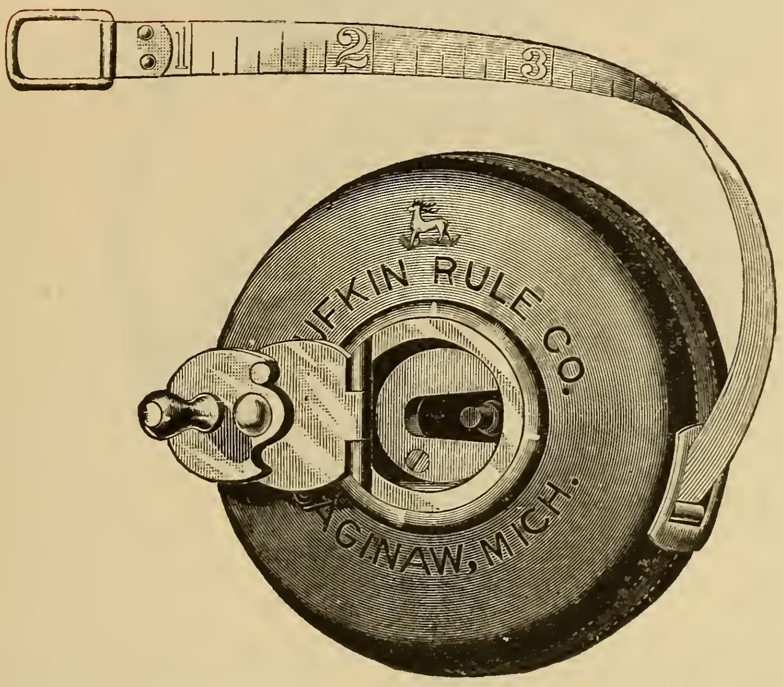
2493

EDDY'S Improved Standard Steel Tapes, ⅜ inch wide, in Leather-Covered Cases, Flush Handle, Metal Lined.

	Length in feet	25	33	40	50	66	75	100
2493.	Steel Tape in 10ths, 12ths or metric measure	$5.00	5.50	7.00	8.00	10.00	12.00	15.00

LUFKIN'S TAPES.

"RELIABLE."


LUFKIN RULE CO.
SAGINAW, MICH.

2495-F

An elegant Steel Tape with double folding Flush Handle, opened by pressing small pin or button on opposite side. Hard leather case. Nickel Plated trimmings. Measurements guaranteed perfectly accurate.

TAPES, ⅜ INCH WIDE.

Marked Feet in 12ths and Links.

	Length in Feet...............	25	33	50	66	75	100
2495-F.	Each............................	$4.50	5.20	7.20	9.20	10.40	12.80

Marked Feet in 10ths and Links.

	Length in Feet...............	25	33	50	66	75	100
2496-F.	Each............................	$4.50	5.20	7.20	9.20	10.40	12.80

TAPES, NICKEL PLATED.

	Length in Feet...............	25	33	50	66	75	100
2497.	In addition to above, each	$1.00	1.00	1.50	1.75	1.75	2.00

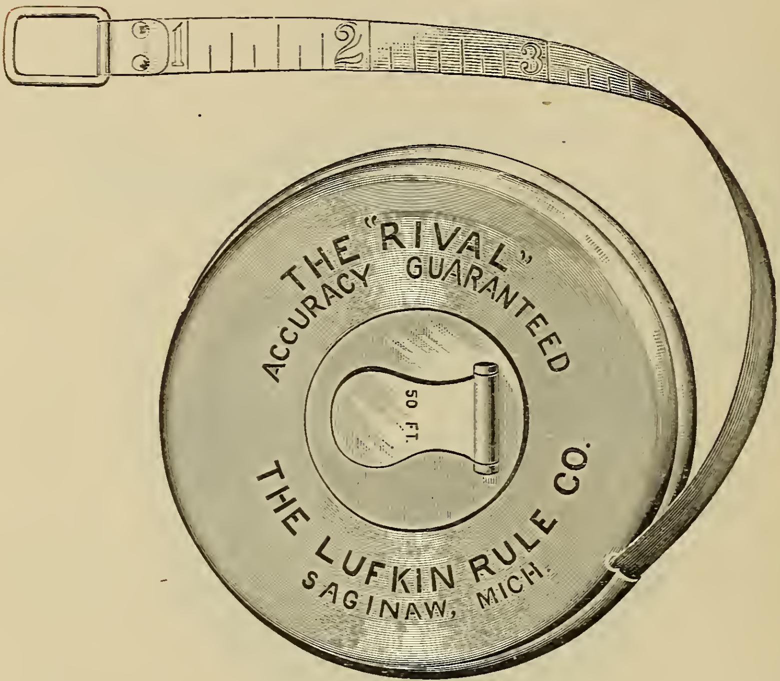
The above Tapes are marked on the back with Links and Poles. When Links are not wanted, they will be supplied marked at every foot instead, at same price.

Tapes marked feet on one side, meters on the other, add 2½ cents per foot to list price.

Tapes marked feet and 12ths on one side, feet and 10ths on the other, add 2½ cents per foot to list price.

LUFKIN'S TAPES—CONTINUED.

"RIVAL."


THE "RIVAL"
ACCURACY GUARANTEED
50 FT.
THE LUFKIN RULE CO.
SAGINAW, MICH.

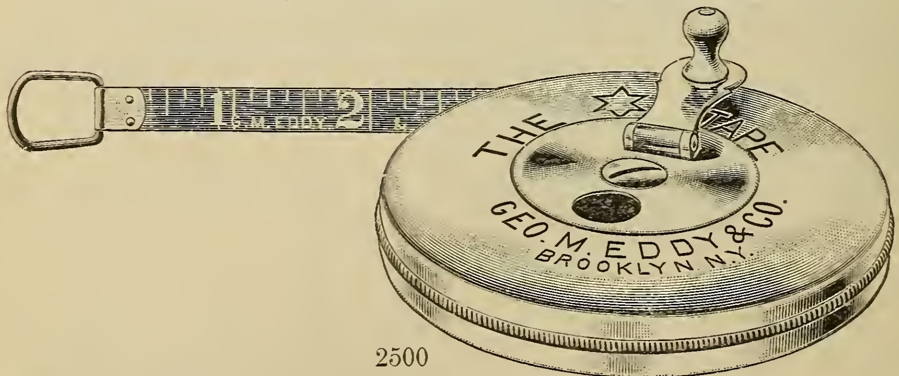
2498

This Tape is put on the market to meet the demand of those who appreciate the value of a Steel Tape and who do not feel inclined to invest in the higher-priced article. This is recommended as first-class, durable, and perfectly accurate.

Nickel Plated Steel Case, Flush Handle, ⅜-inch Tape, marked one side only.

	Length in Feet	25	50	75	100
2498.	Feet in 12ths, each	$3.25	4.00	5.25	6.75
2499.	" " 10ths, "	3.25	4.00	5.25	6.75

EDDY'S "STAR" STEEL TAPE.

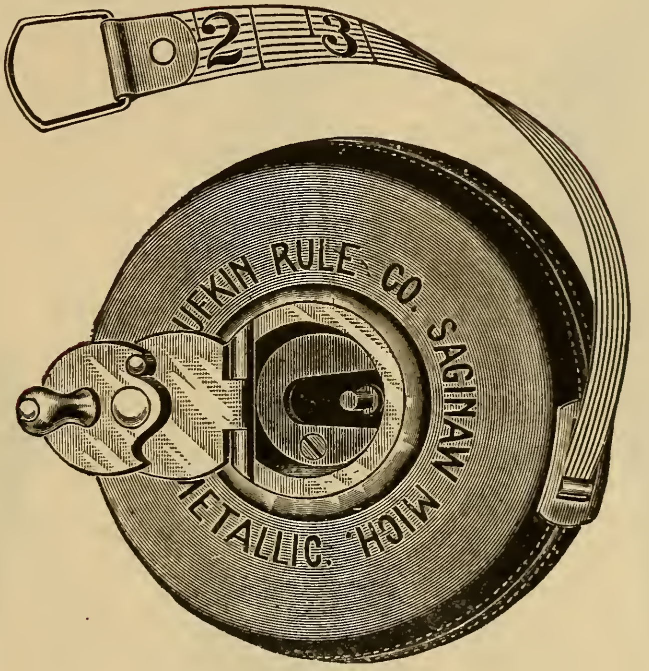

THE ★ TAPE
GEO. M. EDDY & CO.
BROOKLYN, N.Y.
G. M. EDDY

2500

EDDY'S "Star" Steel Tape, ⅜-inch wide, of best steel, marked and finished in best style, mounted in brass nickel-plated case. Cheap, light, durable, accurate and reliable.

	Length in feet	50	66	75	100
2500.	Steel Tape in 10ths or 12ths, one side only, each,	$4.50	5.50	6.00	8.00

LUFKIN'S METALLIC TAPES.



2505

Tape ⅝-inch wide, made of best woven linen, with Metallic Warp, hard Leather Cases, patent double-folding Flush Handle, same as used on the "Reliable" Steel Tape, opened by pressing pin on opposite side. These are guaranteed strictly first-class in every particular. Marked both sides.

	Length in feet.......................... ..	25	33	40	50	66	75	100
2505.	Divided in 10ths and Links, each	$2.10	2 40	2.60	2.90	3.30	3.60	4.50
2506.	" " 12ths " " "	2.10	2.40	2.60	2.90	3.30	3.60	4.50

MEASURING CHAINS.

2510.	Steel, W. G. 12, with Brass Handles, Oval Rings, 50 feet.......Each,	$4.50
2511.	" " 12, " " " " " 100 " ...... "	8.00

BRAZED LINKS AND RINGS.

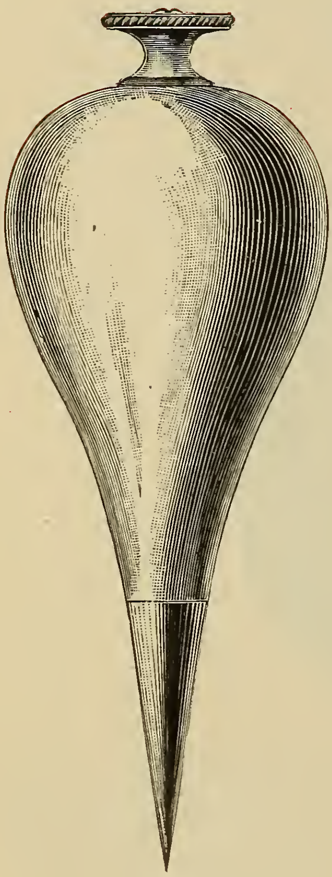
2512.	Steel, W. G. 12, with Brass Handles, Oval Rings, 50 feet......Each,	$ 6.00
2513.	" " 12, " " " " " 100 " ...... "	11.00

IRON MEASURING CHAINS.

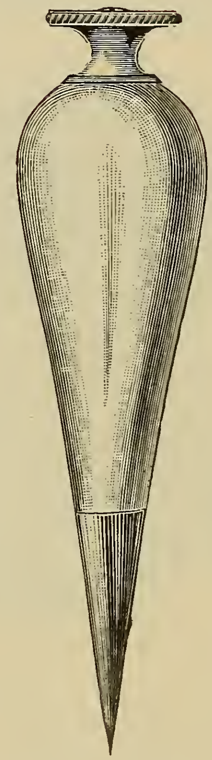
2514.	Iron, W. G. 8, with Brass Handles, Oval Rings, 50 feet.........Each,	$3.50
2515.	" " 8, " " " " " 100 " .... "	5.50

METER AND VARA CHAINS FURNISHED TO ORDER.

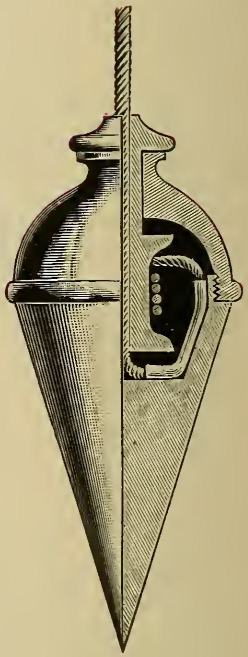
PLUMB BOBS.



2516



2517 — 2518



2521

2516.	Brass Plumb Bob, 6 ounce, with steel point and screw cap...	Each,	$2.00
2517.	“ “ “ 9 “ “ “ “ “ “ “ ...	“	2.25
2518.	“ “ “ 12 “ “ “ “ “ “ “ ...	“	2.50
2521.	Patent Adjustable Plumb Bobs, with concealed reel, around which the string is wound by turning the milled head on top. The friction upon the reel within will hold the bob at any desired point of the line....................................	Each,	$2.50

PLUMB BOB LINE.

2525.	Plumb Bob Line, braided linen..................................	per 25 yards,	$0.50
2526.	“ “ “ “ silk....................................	“ 25 “	.70

ARROWS OR MARKING PINS.

2527

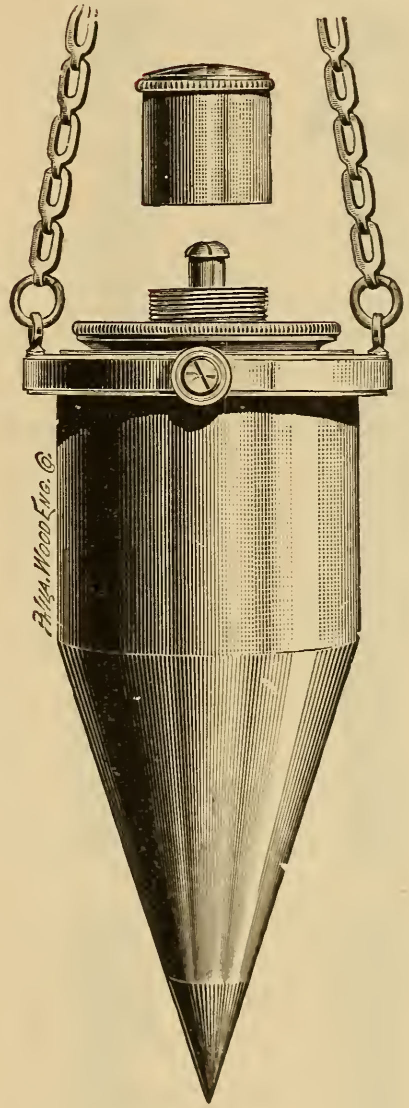
2527.	Steel, W. G. 12, Bright, 15 inches, 11 in Set................................	Each,	$1.00
2528.	“ “ 12, Japanned, 15 inches, 11 in Set......................	“	1.60

STAKE TACKS.

2529.	Stake Tacks, Galvanized, per 2 oz. boxes..................................	Each,	$0.15

These tacks have an indentation on the surface of the head.

MINING PLUMB LAMP.


A.Zeza.Wood Eng. Co.

2530

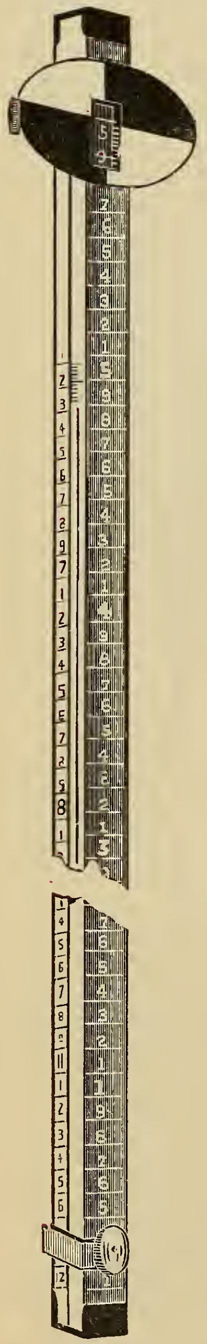
Mining Plumb Lamp is made of Bronze metal with Steel Point; size, 6½ inches long, 2 inches diameter, mounted in universal Adjustable Joints, swung by Chains. It is made hollow to hold oil, and provided with Burner, forming Lamp. Take sight from flame. Packed in Mahogany Box, with Strap.

2530.	Mining Plumb Lamp, 1 in box	$13.00
2531.	" " " 2 "	25.00
2532.	Leather Case, with Shoulder Straps, to hold 1 Lamp	3.50

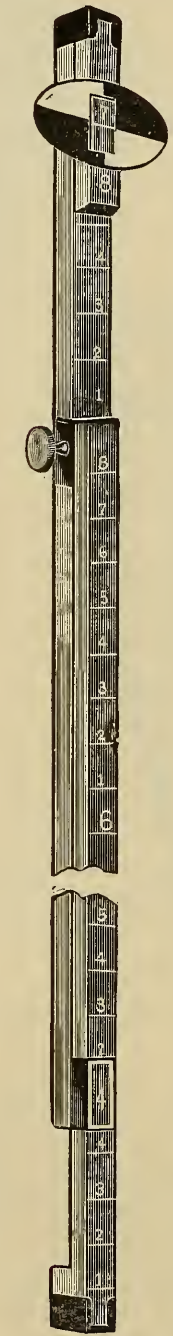
LEVELING RODS AND POLES.

BEST QUALITY.

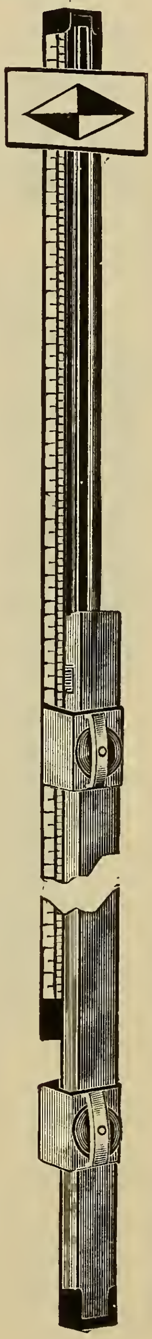
FOR PRICES SEE PAGE 209.



2539

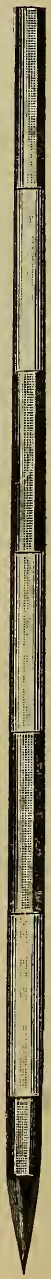


2536



2540

2545



2546

TARGETS of Nos. 2539 and 2536 are round instead of oval as shown in cuts.

LEVELING RODS AND POLES.

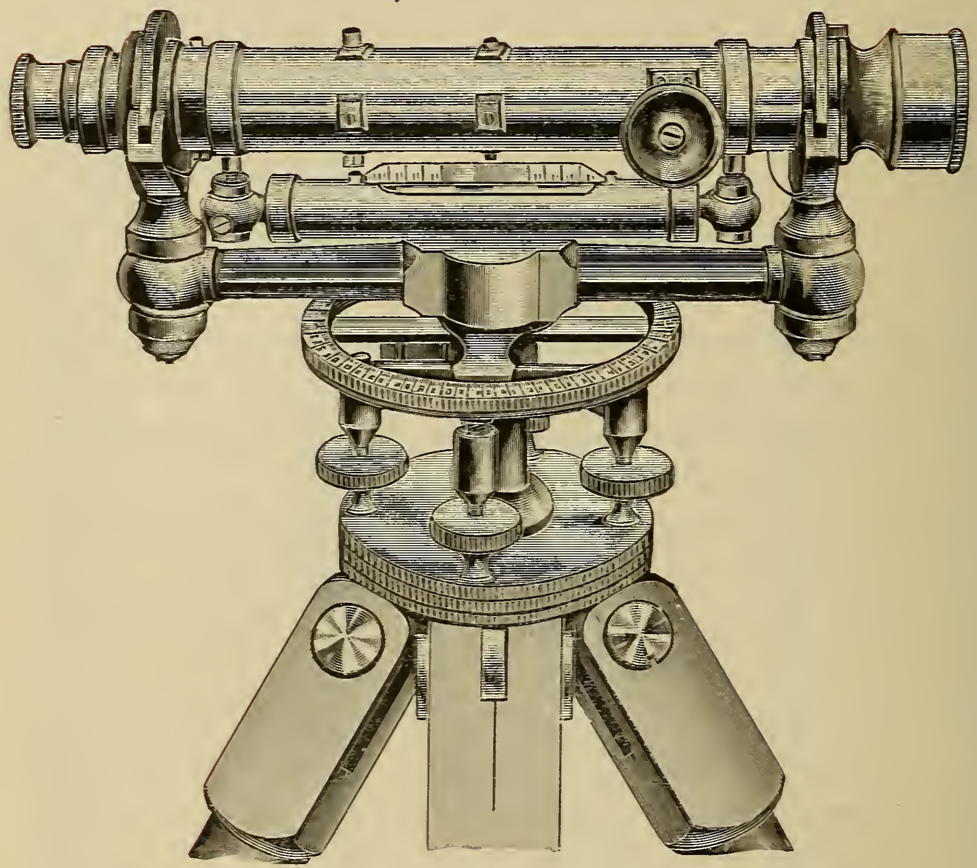
For Illustrations, see Page 208.

		Each.
2535.	**HEAVY PHILADELPHIA ROD,** with Vernier, Clamp and Target, 7 feet long, sliding out to 13 feet, plain	$16.00
2536.	**LIGHT PHILADELPHIA ROD,** with Vernier, Clamp and Target, 6½ feet long, sliding out to 12 feet, plain	14.00
2537.	**HEAVY PHILADELPHIA ROD,** same as No. 2535, subdivided 100 parts to the foot	17.00
2538.	**LIGHT PHILADELPHIA ROD,** same as No. 2536, subdivided 100 parts to the foot	15.00
2539.	**NEW YORK ROD,** divided 10th and 100th parts to the foot, with Vernier, Clamp and Target, 6½ feet long, sliding out to 12 feet	14.00
2540.	**BOSTON ROD,** with Vernier at both ends, 6½ feet long, sliding out to 11 feet 4 inches	14.00
2541.	**MINING ROD,** with Vernier, Clamp and Target, 3 feet long, sliding out to 5 feet	13.50
2542.	**MINING ROD,** same as No. 2541, 5 feet long, sliding out to 9 feet,	14.00
2543.	**ARCHITECTS' ROD,** 5½ feet long, brass mounted with Clamp and Target, sliding out to 10 feet 6 inches, divided to 1 inch and ⅛ inch	6.00
2544.	**ARCHITECTS' ROD,** same as No. 2543, divided 10ths and 100th parts to the foot	6.00

LEVELING POLES, painted Red and White alternately.

	Length in feet	6	8	10
2545.	Round	$2.00	2.25	2.50
2546.	Octagonal	2.00	2.25	2.50

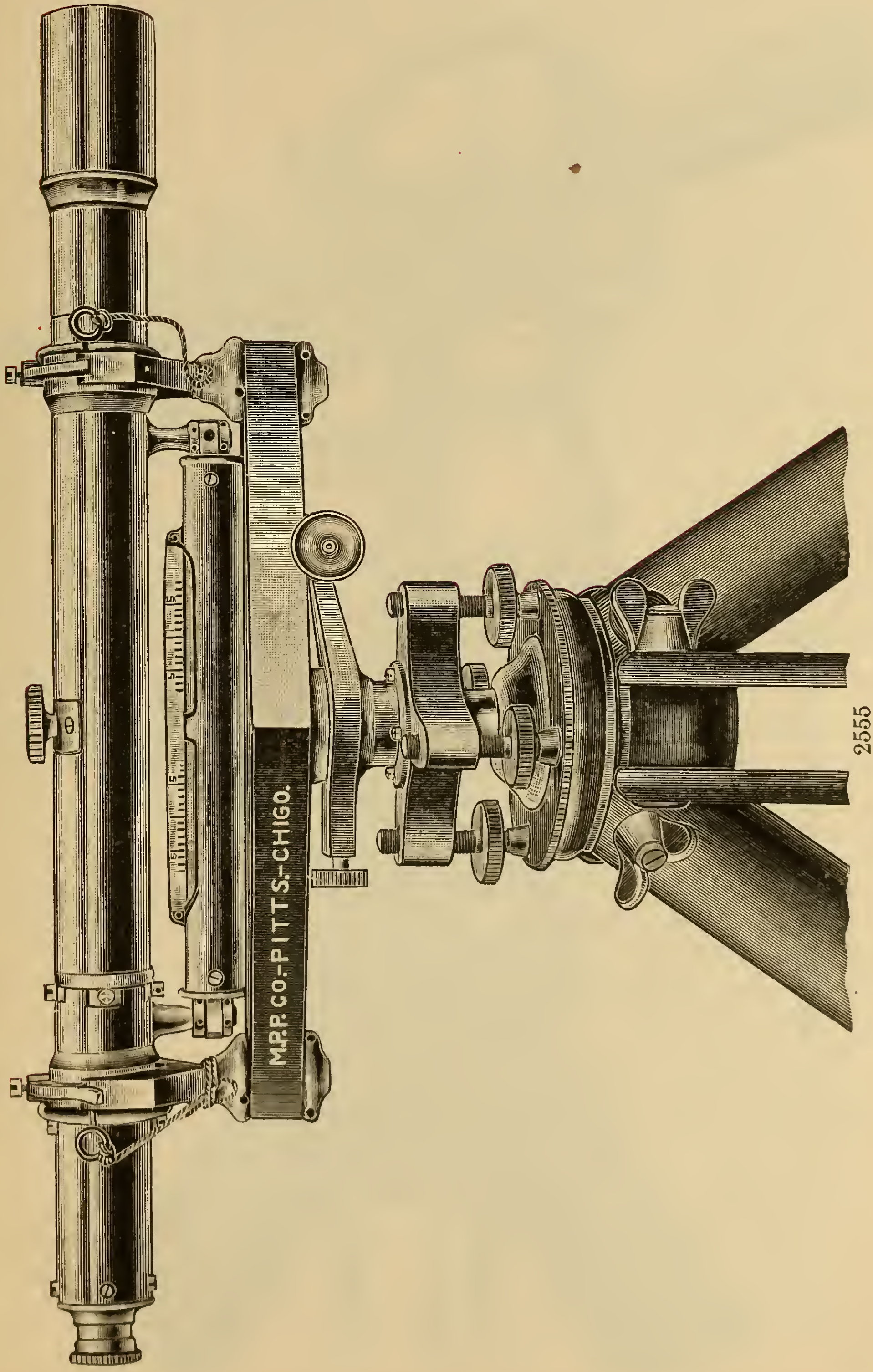
ARCHITECTS' LEVEL.



2550

2550. This Architects' Level is an admirable instrument, and can be highly recommended, as it has met with a very large sale among architects, builders, millwrights and others engaged in construction, and among engineers and surveyors, by whom it is used in city work. The telescope is 12 inches long, of the finest optical qualities, and has magnifying power of about 25 diameters. It has truly ground level of medium sensitiveness which is graduated and securely mounted under the telescope. The telescope has red metal collars, which rest in the Y's and are held in position by clips which are hinged and locked the same as in the engineers' level. The instrument turns upon a horizontal circle 3 inches in diameter, graduated from 0 to 90 each way, and is read to five minutes by a vernier which is fixed to the spindle. The instrument is screwed on tripod and is packed in box fitted with sun shade, plumb bob, reading glass, screw driver, adjusting pins and metal trivet.. Price, $50.00

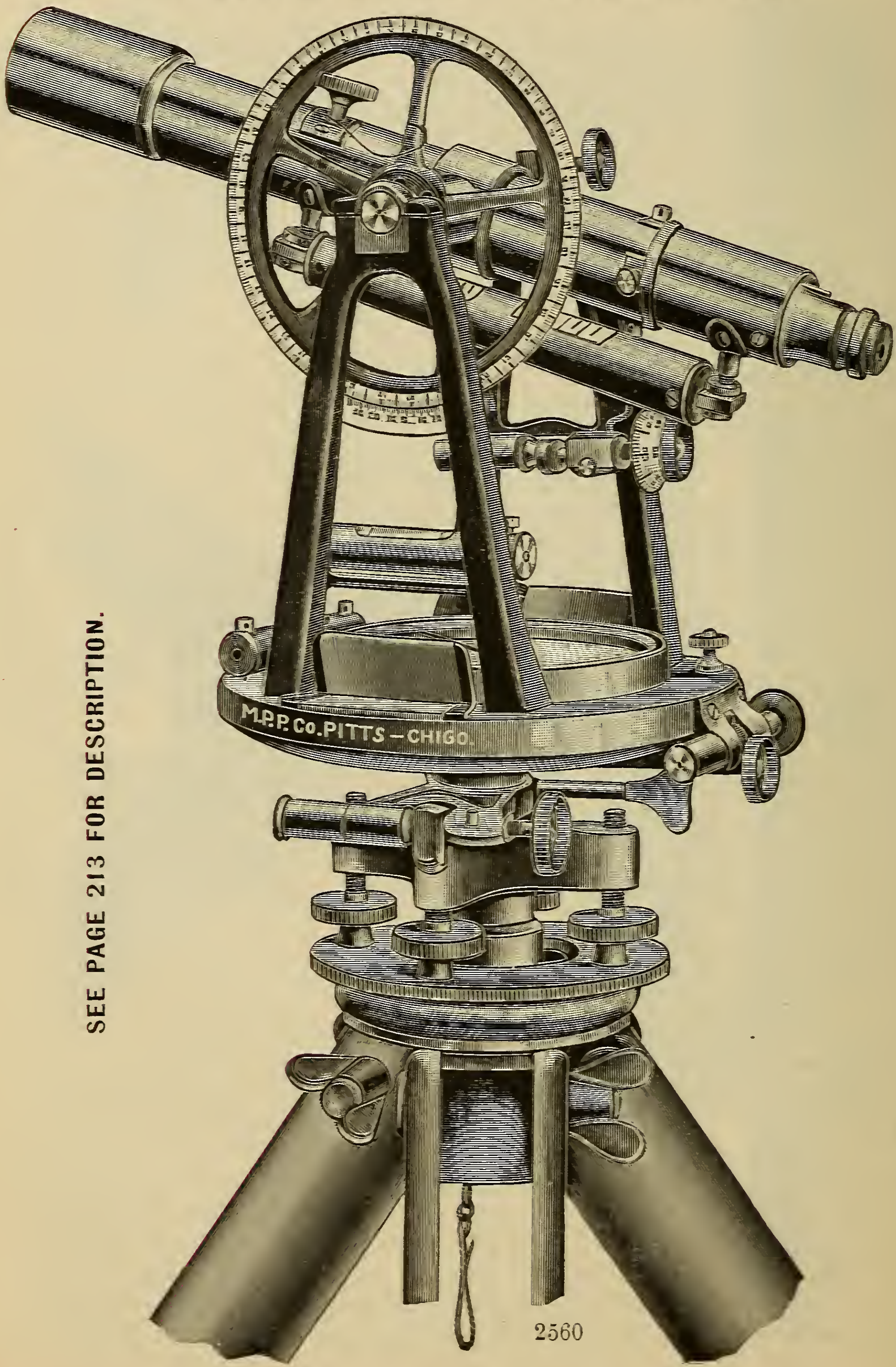
ENGINEERS' WYE LEVEL.


M.P.P. CO.-PITTS.-CHIGO.

2555

SEE PAGE 213 FOR DESCRIPTION.

COMPLETE ENGINEERS' AND SURVEYORS' TRANSIT.


M.P.P. Co. PITTS – CHIGO.

2560

SEE PAGE 213 FOR DESCRIPTION.

ENGINEERS'

18-INCH WYE LEVEL.

See Illustration on Page 211.

2555. Engineers' Wye Level, eighteen-inch powerful telescope; aperture of object glass, 1⅜ inches diameter; eye-piece provided with an improved screw arrangement for the accurate focusing of cross wires; telescope provided with an adjustable stop to readily set cross-wires horizontal and perpendicular; telescope rings are of the hardest bell-metal; the center is of hardened steel; 8-inch very sensitive spirit level; metal-mirror with universal joint; sun-shade with smaller aperture. Mahogany case, wrench, screw-driver and two adjusting pins............................$140.00

ENGINEERS' AND SURVEYORS'

COMPLETE TRANSIT.

See Illustration on Page 212.

2560. Engineers' and Surveyors' Complete Transit; horizontal circle, 6¼ inches; two double verniers reading to 30″; vertical circle, 5 inches, provided with double verniers reading to 30″; verniers and graduation on solid silver; the horizontal verniers protected with fine plate glass; magnetic needle, 4½ inches; adjustment for vertical plane of telescope; improved spring tangent screw; improved lower tangent screw; shifting center to set the instrument exactly over a given point; improved telescope 11½ inches long; objects erect; aperture of object glass 1¼ inches; power of the telescope 24 diameters, which qualifies it especially for telemeter work; eye-piece provided with an improved screw arrangement for the accurate focusing of cross wires; telescope perfectly balanced and reverses at both ends, long compound centers with heavy flanges, sensitive spirit level; sun-shade with smaller aperture. Mahogany case, wrench, screw-driver and adjusting pins..$235.00

MACKEY PRINT PAPER COMP'Y.
PITTSBURGH CHICAGO

IMPROVED
ENGINEERING AND SURVEYING INSTRUMENTS.

MANUFACTURED FOR

MACKEY PRINT PAPER CO. by F. C. KNIGHT & CO.

Mr. F. C. Knight's Statement:

We do not make a cheap instrument; we aim to give the very best instrument possible for the price, and do not care to compete with such as are not up to our standard. We feel confident that, upon investigation, you will find the practicability of and workmanship on the F. C. Knight and Draper Instruments far superior to all others. In construction of instruments we use none but the best metals and materials, employ expert mechanical skill only, and use the latest improved machinery, thereby attaining the highest possible standard of excellence. We positively guarantee the accuracy and workmanship of all instruments of our make.

The business to which we are successors was originated in 1815 by Edmund Draper, under whose ownership and extremely successful management it was continued for over sixty-seven years, during which time he invented many of the most valuable engineering instruments now in use. His establishment was the leading and largest plant of its kind in the United States. His trade not only extended throughout the United States, but also largely in Central America and South America, while his name was by no means unknown in Europe. Since succeeding to the business, our endeavor has been to keep the Draper Instruments up to their original high standard, adding, from time to time, several modern improvements.

The F. C. Knight Instrument is of an entirely different pattern from the Draper, as will be seen by comparing the cuts in the catalogue. Many of the principal features of this instrument were originated by the person whose name it bears. The part that needs special mention is the new style of clamp and tangent movement; the utility and superiority of this over all others now in use can be readily discerned and appreciated.

The object accomplished by this clamp is the overcoming of the possibility of springing the horizontal limb in clamping and unclamping, which has never been positively accomplished heretofore, the cut and description of which you will find on page 224.

DRAPER
IMPROVED TRANSIT.

The Draper Transits are so well and favorably known the world over that they need no special introduction from us. They have been made for over fifty years, with improvements added from time to time, that have kept them up to the requirements of the day. Since becoming the successors to Mr. Draper, the march of improvement has not been lost sight of; it has been our endeavor to make the instrument warrant what it is now termed—a "Draper Improved."

IMPROVEMENTS AND GENERAL DESCRIPTION.

Improvements.—Long centers for short centers; adjustment added to standard for vertical plane of telescope; opposing spring to clamp instead of the opposing screw; have put cups to the leveling screws, and covered all the threads to tangent and leveling screws, making them dust-proof. These improvements make this Transit superior to any instrument now offered for a like price.

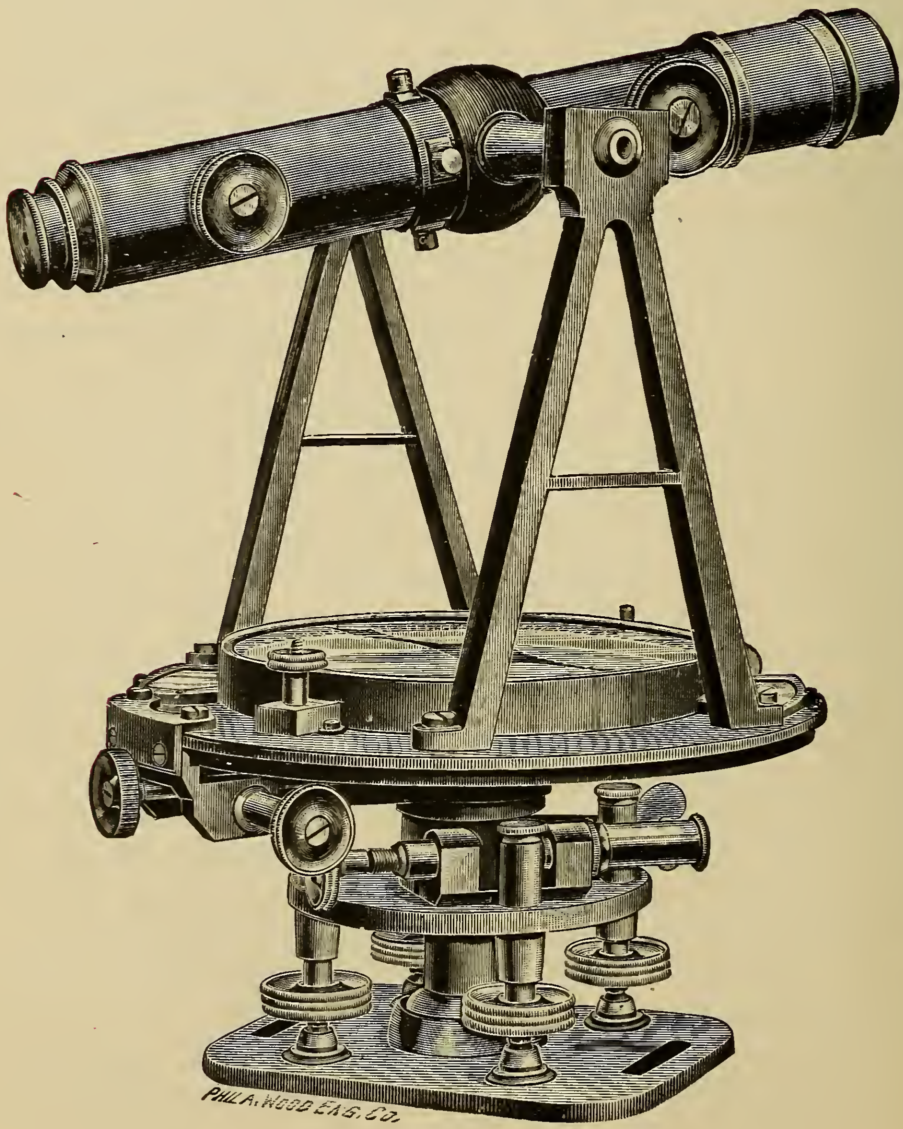
General Description.—The object glass is achromatic, telescope perfectly balanced, reversing at eye and object-ends; has dust and rain-guard to object-slide; rack and pinion movement to focus cross-wires; object erect; power of telescope 14 to 20 diameters; body of telescope is made of seamless drawn tubing; axle is made of the best bell metal, fitted into grooved bearings in standard with adjustment for vertical plane of telescope; compass needle with jeweled cap; ground-glass bubble, graduated. Horizontal limb has two verniers, marked A and B, to avoid possibility of error when reading angles. The limb is figured with two rows of figures, one into quadrants 0 to 90, and the other 0 to 360. The vernier openings are large and covered with French plate-glass, sealed, water-tight; the centers are compound, extra long, made of bell and bronze metal, (not brass); has improved spring tangent. The tripod is of the well-known Draper shifting feature; the leveling screws are not detachable from instrument, they separate only from tripod head, together with the instrument. The tripod legs are made of mahogany, and are of the round, solid pattern (see cut No. 2580, page 227.)

The instrument is packed in case in spring packing, is of light-colored wood, hand polished; has strap and lock; is provided with reading-glass, plumb-bob, lever and screw-driver.

DRAPER
IMPROVED PLAIN TRANSIT.

MANUFACTURED FOR

MACKEY PRINT PAPER CO. by F. C. KNIGHT & CO.


PHILA. WOOD ENG. CO.

2565 — 2566

2565. DRAPER IMPROVED PLAIN TRANSIT.

For General Description, see page 215.

SPECIAL DESCRIPTION:

Telescope, Length	10½ inches.	
Object-Glass, Aperture	1¼ "	
Compass Needle	4½ "	
Lower Limb	6½ "	
Weight of Instrument and Tripod	18 pounds.	
Complete		$160.00

2566. DRAPER IMPROVED PLAIN TRANSIT.

(SMALL)

For General Description, see page 215.

SPECIAL DESCRIPTION:

Telescope, Length	7½ inches.	
Object-Glass, Aperture	⅞ "	
Compass Needle	3 "	
Lower Limb	4¾ "	
Weight of Instrument and Tripod	10 pounds.	
Complete		$140.00

Extras to Nos. 2565 and 2566 Transits:

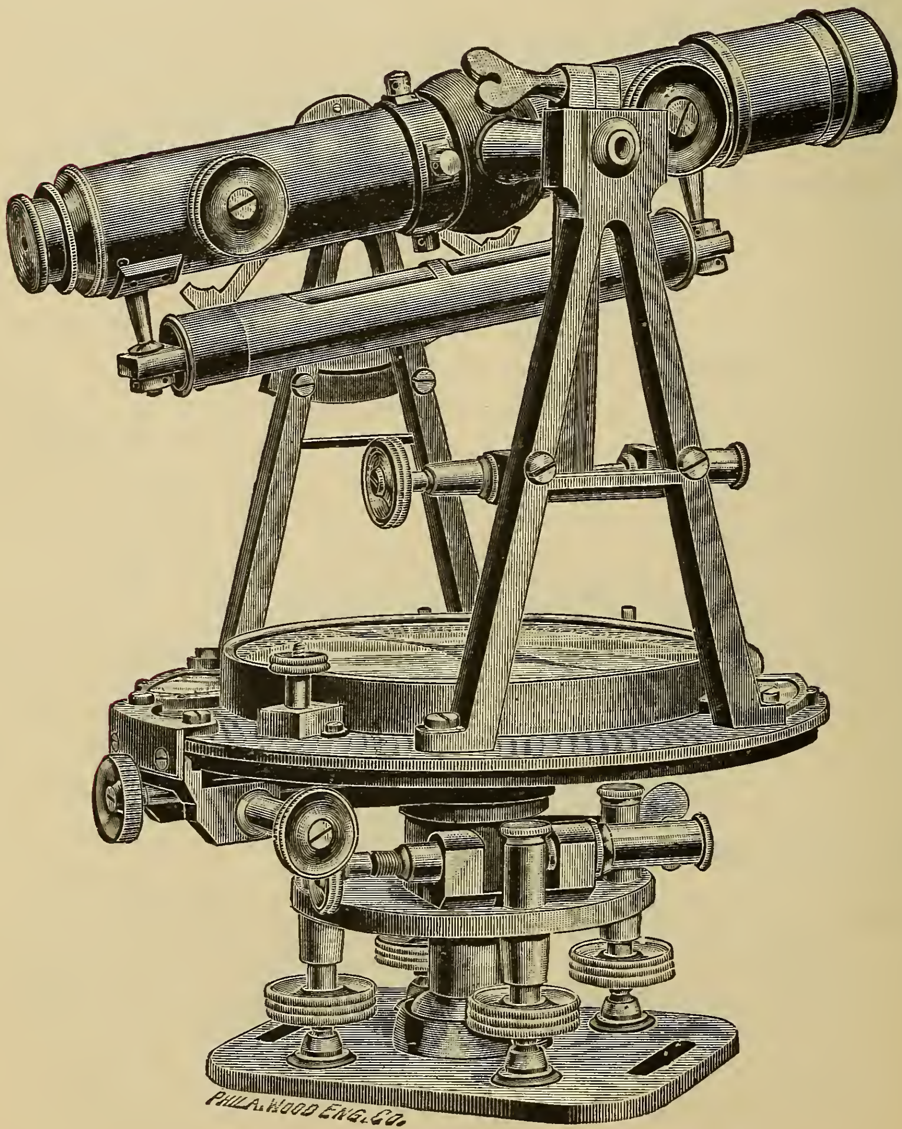
Skeleton Legs instead of Solid Legs, as shown in cut 2582, additional	$ 1.50
Adjustable Legs instead of Solid Legs, as shown in cut 2590, additional	6.50
Adjustable Stadia Wires	8.00
Reflector for Illuminating Cross Wires (see cut 2593)	4.00
Gossamer Waterproof Bag to Protect Transit	1.00

DRAPER IMPROVED TRANSIT,

WITH VERTICAL ARC.

MANUFACTURED FOR

MACKEY PRINT PAPER CO. by F. C. KNIGHT & CO.


PHILA. WOOD ENG. CO.

2567 — 2568

2567. DRAPER IMPROVED TRANSIT with VERTICAL ARC.

For General Description See Page 215.

SPECIAL DESCRIPTION:

Telescope, Length	10½	inches.
Object-Glass, Aperture	1¼	"
Bubble under Telescope	6½	"
Vertical Arc, Radius	6½	"
Figured 0 to 60 each way.		
Clamp and Opposing Spring Tangent to Axle of Telescope.		
Compass Needle	4½	inches.
Lower Limb	6½	"
Weight of Instrument and Tripod	19	pounds.
Complete		$195.00

2568. DRAPER IMPROVED MINING TRANSIT with VERTICAL ARC.

For General Description See Page 215.

SPECIAL DESCRIPTION:

Telescope, Length	7½	inches.
Object-Glass, Aperture	⅞	"
Bubble under Telescope	4½	"
Vertical Arc, Radius	5	"
Figured 0 to 60 each way.		
Clamp and Opposing Spring Tangent to Axle of Telescope.		
Compass Needle	3	inches.
Lower Limb	4¾	"
Weight of Instrument and Tripod	11	pounds.
Complete		$170.00

Extras to Nos. 2567 and 2568 Transits:

Skeleton Legs instead of Solid Legs, as shown in cut 2582, additional	$ 1.50
Adjustable Legs instead of Solid Legs, as shown in cut 2590, additional	6.50
Adjustable Stadia Wires	8.00
Reflector for Illuminating Cross Wires (see cut 2593)	4.00
Gossamer Water-Proof Bag to Protect Transit	1.00

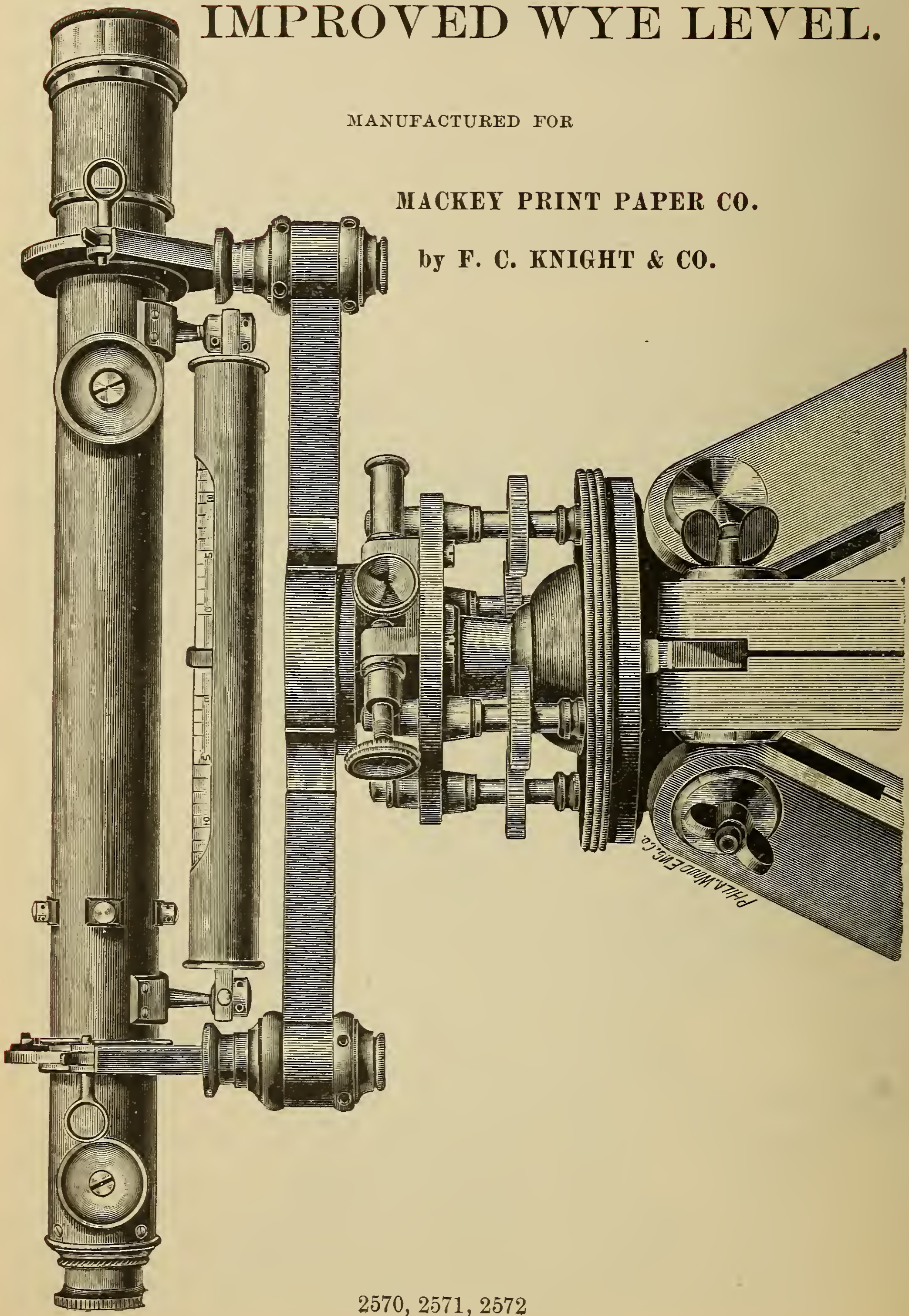
DRAPER

IMPROVED WYE LEVEL.

MANUFACTURED FOR

MACKEY PRINT PAPER CO.

by F. C. KNIGHT & CO.



2570, 2571, 2572

DRAPER

IMPROVED WYE LEVEL.

Nos. 2570, 2571 and 2572.

Has achromatic telescope of a power of 20, 22 and 24 diameters; with dust and rain-guard; sunshade to object-slide; object-glass, 1¼ inch aperture; eye-piece has rack movement to focus cross-wires; spirit-level 6 inches long, vial of which is hand-ground and graduated, adjustable vertically and horizontally; wyes, collars on telescope and cross-bar are made of the best quality bell-metal; wyes are provided with stops to readily set cross-wires horizontally and vertically; one wye is provided with adjustment for altitude; line of collimation true on all distances; object erect; has long center; the upper part of instrument is not detachable from tripod above leveling screws; when packed in case, stands upright; legs of tripod solid, as shown in cut No. 2582, page 227; case, hand-polished, has strap and lock; provided with screw-driver and adjusting pin.

Weight of Instrument and Tripod, 16½ pounds.

2570.	14-Inch Telescope	Complete,	$100.00
2571.	15 " "	"	105.00
2572.	16 " "	"	110.00

Extras to Wye Level, Nos. 2570, 2571 and 2572.

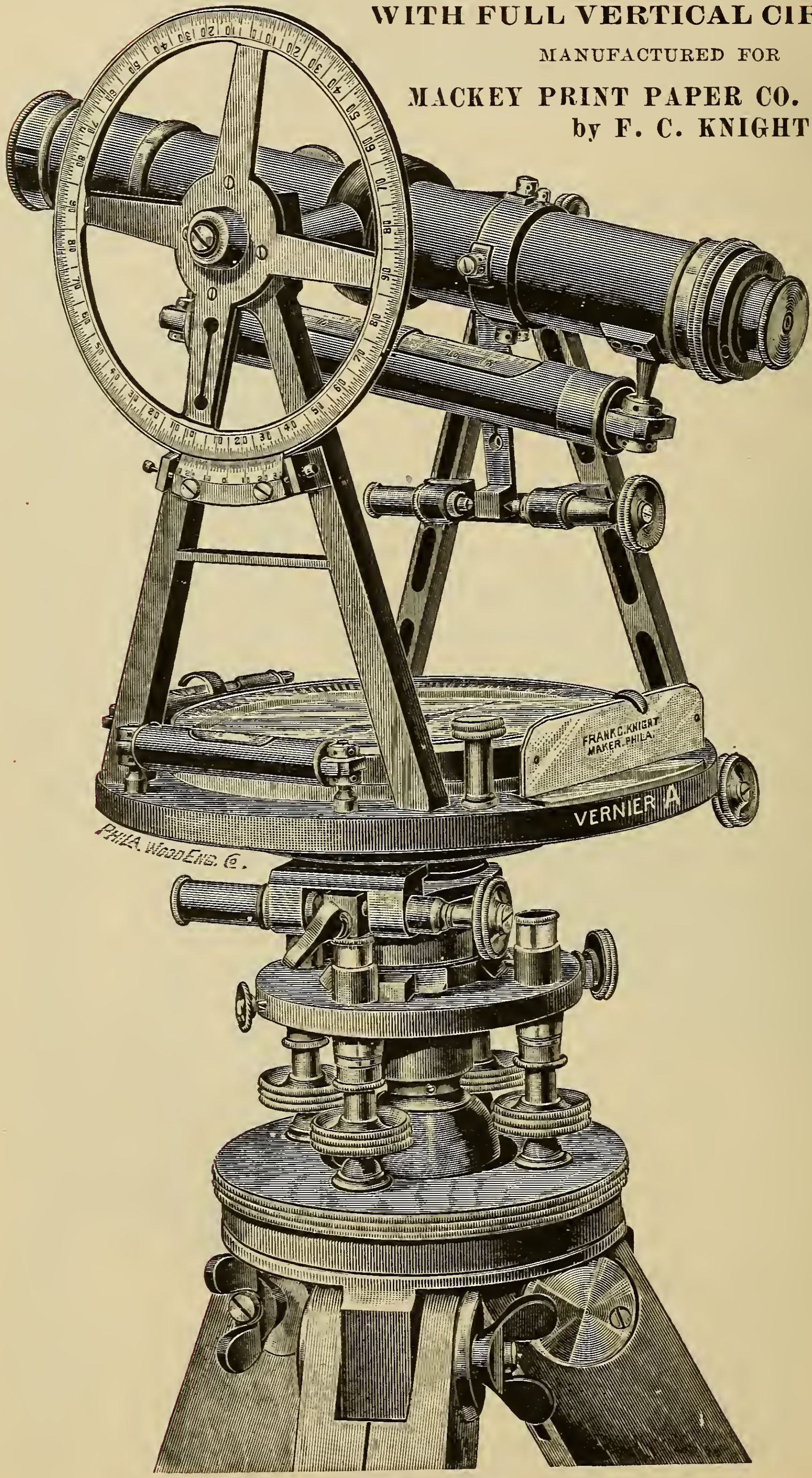
Skeleton Legs instead of Solid Legs furnished, as shown in cut No. 2590, additional	$ 1.50
Adjustable Stadia Wires	8.00
Gossamer Waterproof Bag to protect instrument from rain or dust	1.00

F. C. KNIGHT TRANSIT,

WITH FULL VERTICAL CIRCLE.

MANUFACTURED FOR

MACKEY PRINT PAPER CO.
by F. C. KNIGHT & CO.


FRANK C. KNIGHT
MAKER, PHILA.
VERNIER A
PHILA. WOOD ENG. Co.

2575 — 2576

2575. F. C. KNIGHT TRANSIT AND LEVELING INSTRUMENT, WITH FULL VERTICAL CIRCLE.

For General Description, see pages 225-226.

SPECIAL DESCRIPTION:

Telescope, Length	11 inches.
Object Glass, Aperture	1¼ "
Bubble under Telescope	7 "
Vertical Circle, Diameter	5¼ "
Figured into Quadrants, 0 to 90, with adjustable Vernier reading to Minutes.	
Clamp and Opposing Spring Tangent to Axle of Telescope.	
Compass Needle	5 "
Lower Limb	6¼ "
Weight of Instrument and Tripod	24 pounds.
Complete	$255.00

2576. F. C. KNIGHT MOUNTAIN TRANSIT, WITH FULL VERTICAL CIRCLE.

For General Description, see pages 225–226.

SPECIAL DESCRIPTION:

Telescope, Length	9 inches.
Object-Glass, Aperture	1 "
Bubble under Telescope	5½ "
Vertical Circle, Diameter	4 "
Figured into Quadrants, 0 to 90, Vernier (not adjustable) reading to minutes.	
Clamp and Opposing Spring Tangent to Axle of Telescope.	
Compass Needle	4 "
Lower Limb	5¼ "
Weight of Instrument and Tripod	16 pounds.
Complete	$235.00

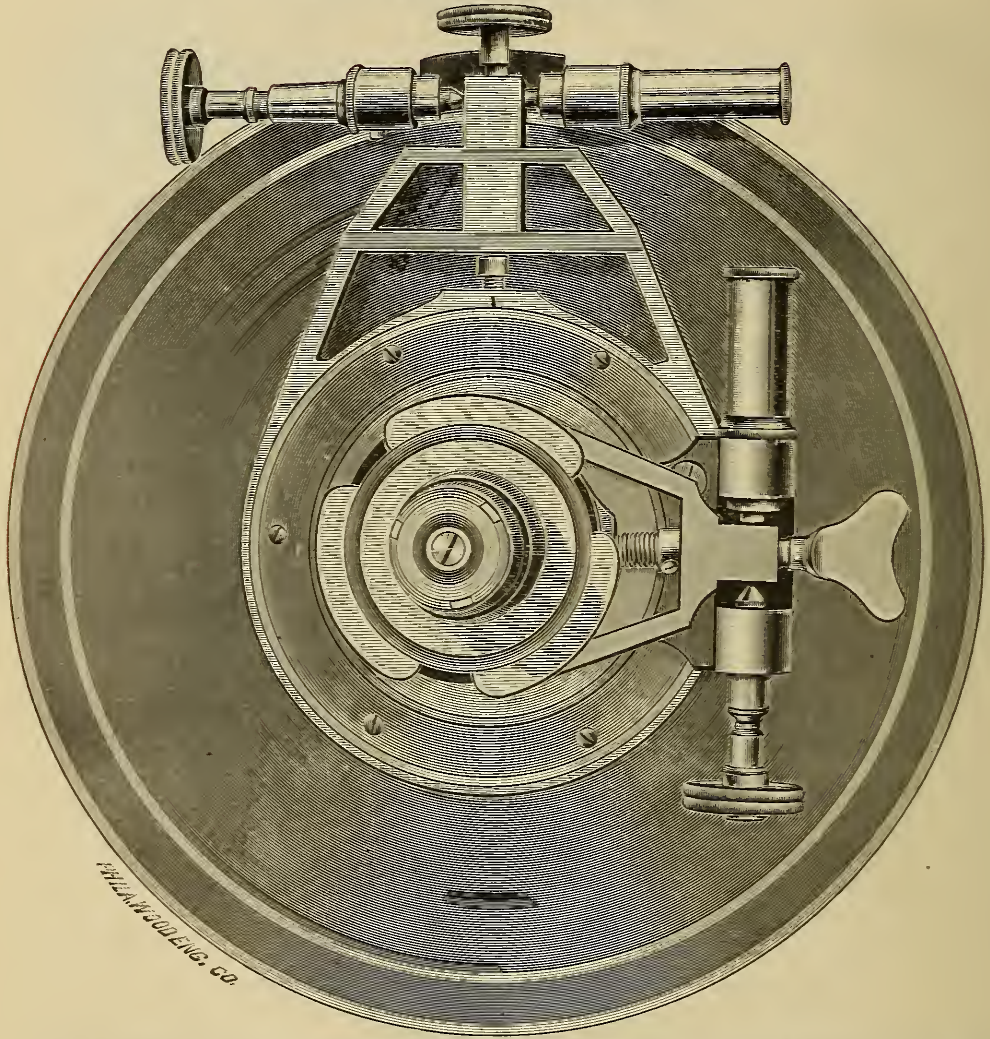
Extras to Nos. 2575 and 2576 Transits.

Adjustable Shifting Legs to Tripod instead of Skeleton Legs, cut 2590, additional	$ 5.00
Adjustable Stadia Wires	8.00
Adjustable Vernier to Vertical Circle on No. 2576	5.00
Gradienter Attachment to Telescope	10.00
Reflector for Illuminating Cross-Wires (see cut 2593)	4.00
Gossamer Waterproof Bag to protect Transit	1.00

IMPROVED CLAMP AND TANGENT

ATTACHED TO THE

F. C. KNIGHT TRANSITS.



This Clamp is the invention of Mr. Knight and is the result of long and careful study and much experimenting on his part. In it he has accomplished the desired end—**A Perfect Clamp.**

This Clamp is attached to and clamps on the large flange of the center; it has the largest clamping surface of any horizontal plate clamp constructed. It works entirely upon the center, not affecting either the upper or lower limb. It works with greatest ease and accuracy, is sensitive to the touch of the tangent screw, yet rigid in holding instrument in position. The clamping and unclamping has positively no effect whatever on the long bubble or sight of the telescope. It is light in weight. In its construction we have added no additional weight to the instrument. The peculiar construction of this Clamp allows the upper and lower limbs to be joined together so closely that it is impossible for any dirt to get between them.

The tangent is on the right of the instrument and is made with a hard German silver, 50 threads to the inch screw, working in a bronze metal nut. The opposing springs are made of phosphor bronze.

DESCRIPTION OF

F. C. KNIGHT ENGINEERING TRANSITS.

The F. C. Knight Engineering Transits have achromatic telescopes, perfectly balanced, reverses at eye and object-ends ; dust and rain-guard to slide ; improved right and left movement to eye-piece; the focus cross-wires accurately ; object erect; power of telescope 22 to 28 diameters ; body of telescope is made of seamless drawn tubing; eye-piece to telescope is provided with slide to close when instrument is not in use ; the axle is *made of the best bell metal* and fitted into grooved bearings in standard with adjustment for vertical plane of telescope; compass-needle has jeweled cap ; all bubbles are ground ; bubble under telescope is graduated ; the plate bubbles are provided with guards ; horizontal limb has two verniers, marked A and B, to avoid possibility of error when reading angles ; the limb is figured with two rows of figures, one with quadrants 0 to 90, the other 0 to 360 ; the quadrants are lettered N. S. E. W., the same as compass ; graduations are on *solid silver, not silver wash ;* vernier openings are covered with French plate glass (sealed watertight) ; the glass is close to horizontal limb to prevent parallax in reading angles. Ivory reflectors are provided to opening of vernier.

The centers are compound, upper plate center is 3¼ inches long, made of the best bell and bronze metal, not brass as is ordinarily used.

Clamps and tangent are of the new improved F. C. Knight pattern. See description on page 224.

Tripod is provided with a shifting head for the accurate centering of instrument over point.

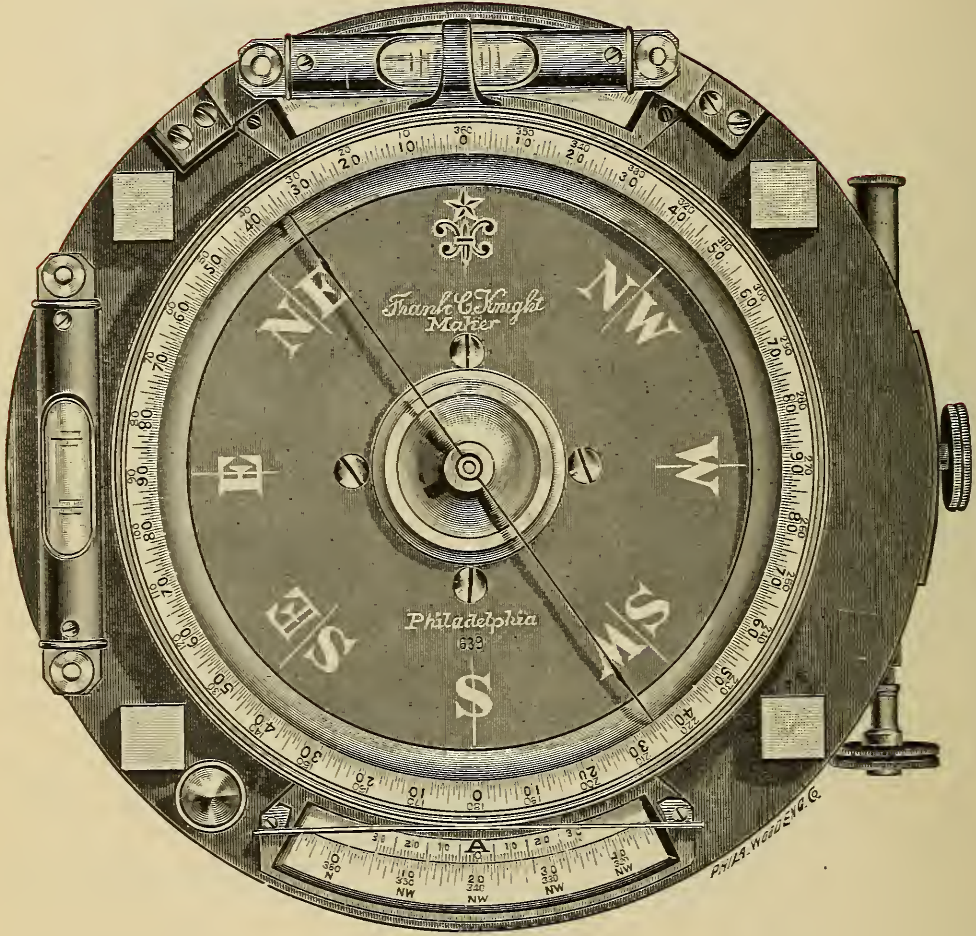
This instrument separates into three parts ; the upper part of the instrument is detachable from the leveling screws, and the leveling screws from the tripod.

The tripod legs are of the skeleton pattern, as shown in cut No. 2582, on page 227. The instrument is packed separate from leveling screws in a hand-polished case, has strap and lock, is provided with reading glass, plumb-bob, two levers, and two screw-drivers (plain and forked).

The case has spring packing throughout to prevent injury to instruments in handling.

MACKEY PRINT COMP'Y.
PAPER
PITTSBURGH CHICAGO

MAIN PLATE.



The above is a view of the Main Plate of the F. C. Knight Transit with the standards off, showing the positions of the verniers and plate levels, the compass ring and the way it is graduated, and its double row of figures, the inner row figured in quadrants 0 to 90, the outer row 0 to 360. The level over vernier B is so elevated as to give an unobstructed view of the vernier. The bubbles are graduated; the one over vernier B is protected by a guard ; vernier A has an ivory reflector to throw additional light on vernier. You will note that the raising work of compass needle is so constructed as to allow no aperture for dust to enter the plate, as is usual with most transits.

TRIPODS.

MANUFACTURED FOR

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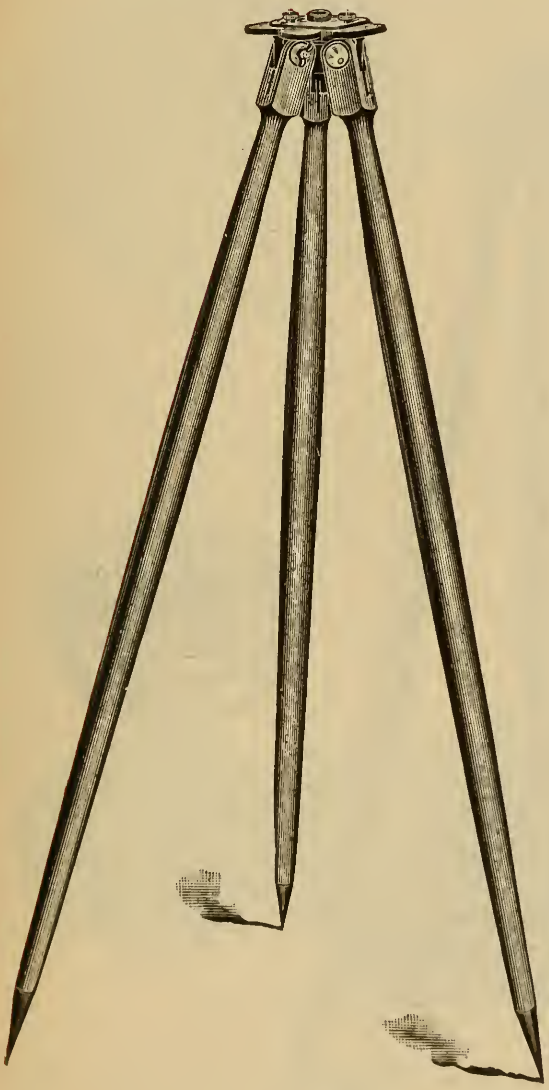
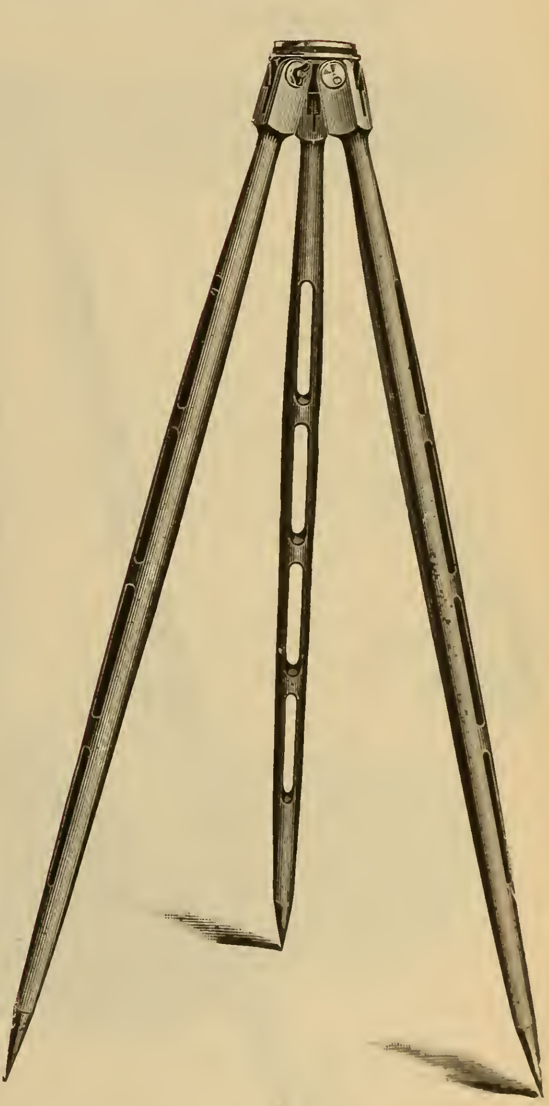


2580

This Tripod accompanies all Draper Instruments.



2582

This Tripod accompanies all F. C. Knight Instruments.

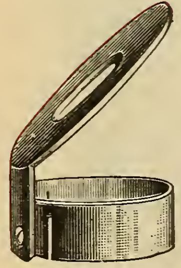
2580.	Mahogany Solid Legs, with Head	per set,	$17.50
2581.	“ “ “ without Head	“	7.50
2582.	“ Skeleton Legs, with “	“	19.00
2583.	“ “ “ without Head	“	9.00

TRIPODS—CONTINUED.

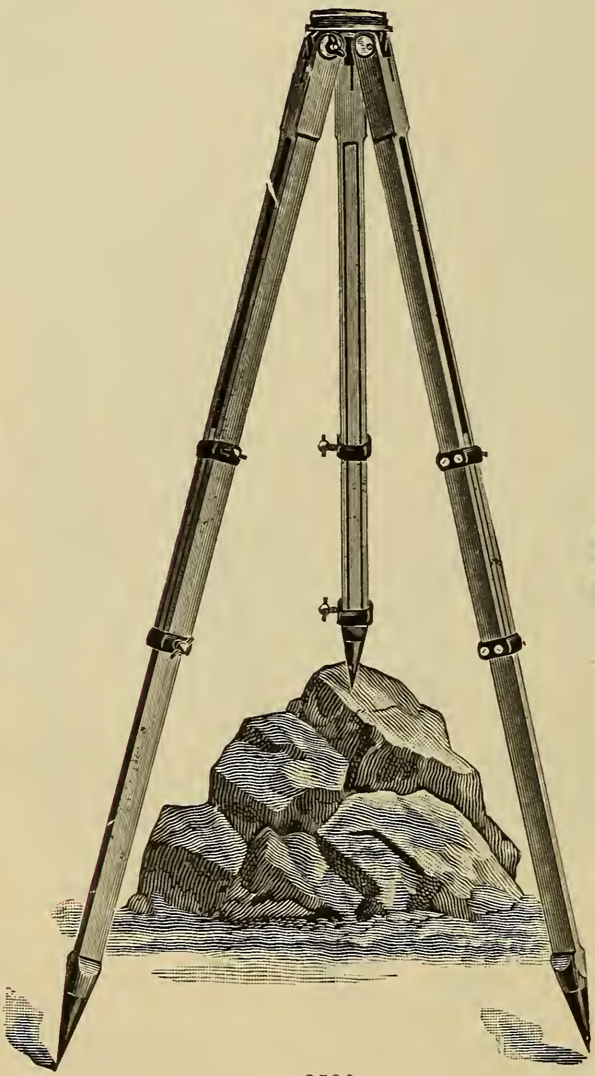
EXTENSION TRIPOD.

MANUFACTURED FOR

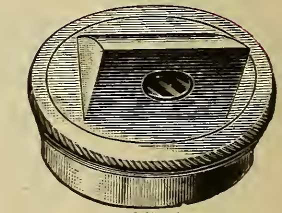
MACKEY PRINT PAPER CO. by F. C. KNIGHT & CO.



2593



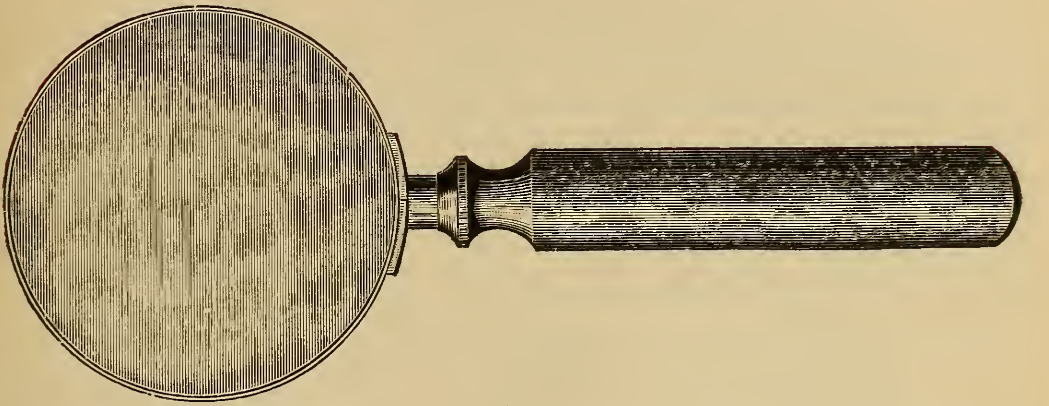
2590



2594

2590.	Extension Tripod. Light, firm and strong, with an adjustment that can be quickly manipulated ; has been in use for many years and has received universal commendation.. .... each,	$20.00
2591.	Three Extension Tripod Legs in place of Solid Legs, furnished with Draper Instrument, additional..	6.50
2592.	Three Extension Tripod Legs in place of Skeleton Legs, furnished with F. C. Knight Instrument, additional........	5.00
2593.	Reflector for Illuminating Cross-Wires..	4.00
2594.	Diagonal Eye-piece, for Vertical Sighting................................	8.00

MAGNIFYING OR READING GLASSES.

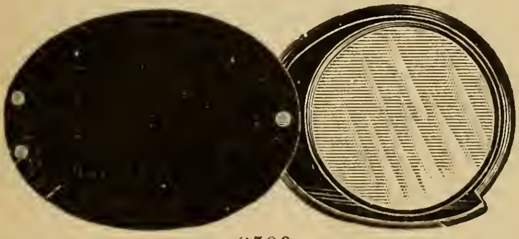


2595

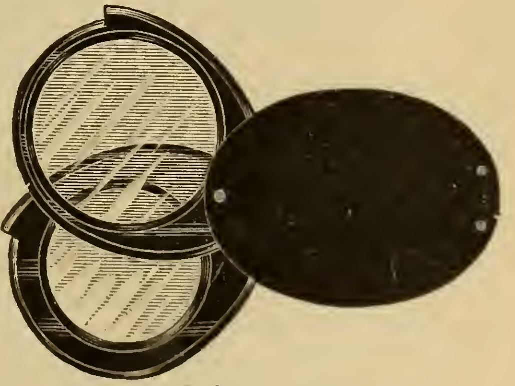
2595. Size, Inches	1½	2	2½	3	3½	4	4½	5
Each	$0.55	.75	1.15	1.25	1.75	2.20	3.00	3.75

The above Magnifying or Reading Glasses are of the best quality, being manufactured for us by one of the largest manufacturers of this line of goods. The lenses are of superior magnifying power, and well mounted in round nickel-plated frame, with polished ebony handle.

POCKET MAGNIFYING GLASSES.



2596



2597

2596. Mounted in Hard Rubber, Oval Pattern, 1 Lens.

Diameter, Inches	¾	1	1¼	1½
Each	$0.30	.35	.50	.60

2597. Mounted in Hard Rubber, Oval Pattern, 2 Lenses.

Diameter, Inches	⅝ and ¾	⅞ and 1	1⅛ and 1¼	1¼ and 1½
Each	$0.50	.60	.90	1.10

SCIENTIFIC PUBLICATIONS.

We do not list anything at all in the line of Scientific Publications, but are in a position to quote LOW PRICES on any of the STANDARD WORKS.

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